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POSTGRADUATE EDUCATION AND THE NATIONAL HEALTH SERVICE*

BY

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The Regulations governing this Lectureship state that the subject "shall be one of interest connected with medical learning or science," and the selection of postgraduate medical education as the subject for this occasion will, I trust, fulfil these requirements and meet with the approval of the Founder and of our College. It is a subject that has been much discussed in recent years, and it has acquired a new interest with the prospects of a National Health Service in the immediate future.

Postgraduate medical education has, of course, existed as long as the profession of medicine, but it has engaged serious attention in this country in an organized form only since the beginning of this century. I do not propose to review what has been accomplished in the past, because it has been of necessity inadequate, but I must pay a tribute to the medical profession of Edinburgh, its University and the Royal Colleges, for the enterprise and efficiency of their pioneer contributions during the past forty years.

Purpose and Policies

The aim must surely be to enable each member of the medical profession, no matter what his professional field may be, to be in constant touch throughout his career with the leaders and teachers of medicine and with wiser and more experienced colleagues. His undergraduate education is designed to make him observant, receptive, and critical, to enable him to use experience that he may grow in learning and in wisdom; but he will fail to make full use of his intelligence and training unless he can share the experiences and learning of his colleagues and keep his faculties of observation and criticism always sharpened by contact with those whose role it is to educate and to instruct. There is no reason to think that this has not been the aim of all who have provided postgraduate education in the past, but it has not been possible to reach this goal for reasons which are largely economic. The public requires the help and services of doctors at all times, and the latter cannot leave their patients unless adequate replacements are available. Replacements have not been available in the past in the necessary numbers. The medical profession is fully occupied, and more, in carrying out its daily duties, and it will be necessary to expand it materially in order to free any considerable number for the pursuit of postgraduate studies. Nor have the numbers of trained and experienced teachers been adequate to enable postgraduate education to be provided on anything like the scale required. There have, of course, always been medical men, both general practitioners and specialists, who have continued to keep in touch with centres of progress and learning, but they have been a minority. In some instances this is effected by private and individual arrangements, in others advantage is taken of local organizations, and the latter are important as they afford experiences that are useful for planning on a wider scale.

In order that the Government's plan for a National Health Service, involving as it does a comprehensive service for all, may be successful a large expansion of the medical profession will be necessary in the spheres both of the general practitioner and of the specialist. This will require a number of years and involve a considerable increase in the accommodation available in the medical schools of the country. In due course, however, there should be the numbers of experts and teachers required for postgraduate education, and there should be the necessary replacements to give every medical man the time required for his continuing education and training. The National Health Service will be based on a regional organization, each region centred for professional guidance on a University and its medical school, and composed of areas or divisions each of which will provide all the ordinary hospital and specialist services. The main divisional hospital or group of hospitals will be staffed by specialists in each of the major branches of medicine and surgery, including general medicine and general surgery, and it is largely through this staff that the necessary expansion in postgraduate education can be provided. This staff will be in constant contact, on the one hand with the teaching staffs of the University and medical school of the region, and on the other with the general practitioners of the area and the staffs of the smaller local hospitals. The professors and other teachers in the University departments should be fully occupied in the education of undergraduates and in advancing their subjects by research, and should not, except occasionally, be diverted from these essential duties to take part in postgraduate instruction; it may well be advisable for the Universities to institute chairs and departments expressly for advanced and postgraduate education in those branches of medicine and surgery that belong more especially to the postgraduate field. In London, with its peculiar circumstances of size and influence, this has already commenced and is being further developed as rapidly as possible.

The report of the Interdepartmental Committee on Medical Schools assumes that the Universities should be responsible for the development of postgraduate medical education and makes a valuable contribution to the subject. The Government has accepted this report and the Treasury and the University Grants Committee have indicated their willingness to help financially. The acceptance by the Universities of this responsibility is most welcome, for it ensures that the education provided will be of University standard. This is a vague term without any exact connotation, but surely it means that the instruction will not be merely technical and vocational, but will also be rational, co-ordinated, and cultural.

This appears to me to be of the greatest importance. There are many procedures in the practice of medicine, both in diagnosis and in treatment, that require technical skill of a high order if our patients' lives are to be saved and their health preserved. Some of these procedures can be isolated and entrusted to medical auxiliaries, others are part of more complicated procedures requiring the co-ordinated knowledge and judgment of the qualified specialist. Many fall between these extremes. There are, therefore, many essentials to successful practice that are technical, and it is tempting to fill courses of postgraduate instruction with descriptions and demonstrations of mechanical ingenuity and manual dexterity. By entrusting postgraduate medical education to the Universities this danger will, I trust, be avoided. The Nation requires from the medical profession something much more than technical skill. The individual looks to his doctor for help and guidance when his efficiency is impaired, whether the cause be spiritual or material.

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To train our doctors to this high calling, to enable them to shoulder their patients' burdens, requires teachers who by example and precept will inspire them with ideals of service and give them pride in cultural attainments as well as instruct them in professional skills. And it is to the Universities that we look to select and train the teachers we require.

We are passing through difficult times with important years of reconstruction ahead. The supply of competent teachers inspired and instructed by the older generations has been interrupted by two wars, and a National Health Service might easily produce a corps of time-servers. The maintenance of its standards is therefore a vital problem now for the medical profession, and the answer to the problem is largely an educational one and one for the medical schools to supply.

We can look forward, then, to the National Health Service providing in due course the increased number of experienced teachers and the opportunities and time for both general practitioners and specialists to attend postgraduate studies. As the plans for the new Service are developed, we must watch that they do provide what is required, for the success of the Health Service depends to a large extent on the professional standard of the medical men that will staff the Service at all levels. The need for a Service such as the Government now proposes has been questioned, and it has been suggested that the medical care of the Nation is quite satisfactory. Those who voice such opinions are, I would submit, basing their view on the condition in some particular part only of the whole, limited perhaps to locality or perhaps to a section of the profession. Those who have been concerned with the administration of the Emergency Medical Service in the war and have had an opportunity to see the standard of service available over the country as a whole are unable to agree. The knowledge and skill available for the preservation of health, the care of patients, and the treatment of disease were not accessible to large sections of the population, partly because of lack of co-ordination between the different sections of the medical services and difficulties in the pooling of resources, but largely because of ignorance on the part of medical men of what could be done and of how much better someone else with greater facilities and assistance at his disposal could serve their patients' needs. The breaking down of the barriers to the exchange of knowledge and experiences and frequent contact with centres of teaching and research should correct these faults to a large extent and improve the standard of medical practice. It will increase also the confidence of the medical profession in their ability to perform their high calling and give them cause for pride and happiness in their chosen careers. To my mind these are strong reasons why the medical profession should welcome the general principles embodied in the Government's proposals and the Nation support them; they depend on an efficient scheme of continuous postgraduate studies, and the ability of the medical schools to provide the instruction required and to realize the importance of maintaining and of raising their standards.

The report of the Interdepartmental Committee on Medical Schools has outlined the types of postgraduate education which the Committee regarded as essential and indicated briefly where they might be provided. They considered separately the training of specialists, including general physicians and general surgeons, and the postgraduate studies suited to the needs of general practitioners. They regarded the conditions in London as exceptional because of its large number of undergraduate medical schools and special hospitals, and because there was already within the University of London a medical school for postgraduate education only. The report includes recommendations for the development in London of the administrative organization required for the future. Since the publication of the report considerable progress has been made in carrying out the recommendations, and valuable experience has been acquired through providing training for specialists and for general practitioners returning to civilian practice on release from the Forces.

The Training of Specialists

It is generally agreed that the essential requirement in the training of a specialist in general medicine, general surgery, or one of their special branches is the holding of a responsible hospital appointment of the type known in different parts of the country as registrar, resident medical officer, resident surgical officer, first assistant, chief assistant, and clinical tutor. Such posts are obtained after the graduate has held junior resident appointments. They are relatively few in number and the competition for them ensures that the holders have been carefully selected. The length of time during which such posts are held is not uniform and probably should not be rigidly defined, but it seems to be generally agreed that a minimum period of five years of postgraduate training is required before a graduate can be regarded as competent for the responsibilities of a clinical specialist.

The holding of a responsible hospital appointment does not of itself suffice. There must be adequate supervision by experienced teachers, one of whose duties must be to train the candidates for their careers as specialists, and for this more is required than clinical material and the usual hospital equipment. The duties assigned to the candidates should be sufficiently light to enable them to study their cases thoroughly; laboratory facilities must be provided to enable them to do this, they should be encouraged by group discussions to share their problems and experiences, they must have ready access to libraries so that they can explore the literature of their subjects, they should be in close touch with other general and special clinical departments, and it should be possible for them to spend part of their period of training working in one of the pre-clinical departments of a medical school or in a well-equipped pathological laboratory. They should be encouraged to undertake original investigations or share in the researches of others, and should be given opportunities to show their aptitude for teaching. Above all they must be guided and supervised throughout their period of training. In short the training of a specialist can be carried out only in the adequately staffed and well-equipped department of a medical school.

At present, with a few exceptions, only the undergraduate medical schools and their teaching hospitals and the Postgraduate Medical School in London can provide the necessary conditions, and the appointments of the kind required at these hospitals are too few to train the specialists needed for the National Health Service and to make up for the loss of six years of war, during which the number who received adequate training was below the normal pre-war figure. The recent release from the Forces within a period of months of many candidates for specialist careers has created an abnormal situation, and many of them have had to be appointed to hospitals that cannot provide the necessary supervision, equipment, and other facilities. The present arrangement must be recognized as an emergency measure and not as an indication of the standard that should be approved when conditions become normal once more.

The report of the Interdepartmental Committee on Medical Schools recommended that the number of appointments in teaching hospitals suitable for the training of specialists should be increased. There are ample clinical material and other opportunities for a considerable increase. Before the war the holders of these appointments were in general too busy to stop and think. Quiet thought, discussion, and reading under wise guidance are essentials for sound education. The number of new posts that can be created is limited by the clinical material available to properly equipped departments, but there is room for considerable expansion of University control over clinical teaching and clinical material; and the association of municipal and voluntary hospitals with the central teaching hospitals and medical schools, as advocated by the Interdepartmental Committee, should enable still further appointments to be available for specialist training. This association should be readily accomplished under the regional system of the new health service. The different appointments will vary in the value and type of training they afford, and each will be peculiarly suited to some stage in the progress of the individual graduate. A system of transfer from one unit to another and one hospital to another should be arranged. In due course the divisional or area hospitals will be staffed by well-trained specialists from the University departments, many of them competent teachers and researchers, and a period of service at these hospitals could be included in the approved course of training. In these various ways the basic studies and practical training of the specialists required for a comprehensive service can be provided and high standards maintained.

Experience has shown that there is a need for types of instruction additional to hospital appointments for graduates aiming at careers in the specialties. Their provision is a problem that chiefly concerns London, but it concerns Edinburgh also to an extent that is only less in degree. Graduates from other educational centres in this country, from the Dominions, Colonies, and foreign Universities, come to London and Edinburgh, and to a lesser extent to other centres, for postgraduate study and are in many instances aiming at a higher degree or specialist diploma. They come at all stages in their training, stay for varying periods, and are not necessarily seeking a full training in this country. They may plan to obtain their appointments in their own hospitals, or may be aiming at a career in general practice with one of the specialties as an additional accomplishment. For these graduates a course is required, extending over a period of about six months, which should provide the basic principles for the specialty and include lectures and demonstrations in applied anatomy and physiology and in pathology, and clinical responsibilities such as are allotted to medical clerks and surgical dressers. Such courses have been available at the Postgraduate Medical School and at certain of the special hospitals in London, and their educational value has been clearly demonstrated. By means of these courses the visitor's time is usefully occupied until he is ready to obtain a hospital appointment, and through them he becomes known to the school authorities and his suitability for appointments and for further specialist training can be assessed.

Many graduates from over-seas have already completed basic studies and obtained a practical training in their intended specialty before coming to this country. They wish to learn something of the methods, thoughts, and practice of the leaders of the profession here, and for them an advanced revision course consisting of lectures and clinical demonstrations would be invaluable. It should not be intensive, but should allow time for attendance at hospital practice and public lectures, and for reading. Such a course might extend over a period of about three months, and not only would meet the needs of the senior graduate from over-seas who is able to visit this country for a relatively short time, but would be suitable also for the graduate from this country who has completed his hospital appointments and requires his knowledge and experience revised, rounded off, and placed in proper perspective. A few such courses have been available in general medicine and general surgery, both in London and in Edinburgh, but more are required, and they should be available also in the principal special branches.

In the National Health Service there should be no difficulty in maintaining for specialists an uninterrupted connexion with centres of medical education. The regional organization will be based on a medical school, and the specialist staffs of the divisional hospitals will remain in close touch with the hospitals and teaching departments of the regional medical school. They would meet regularly at the University for discussion and for practical demonstrations, and would be encouraged to continue to advance their subjects by periods of work in the laboratories of the medical school, by co-operating in the researches of their University colleagues and by help and advice.

Further Education for General Practitioners

It may prove more difficult to provide continuous education for general practitioners. Intensive refresher courses have been offered for many years at several medical schools and have been so well attended that they clearly provide, to some extent at least, for the needs of the general practitioner. Those who attended were able as a rule to do so only at intervals of several years and were the more enlightened and progressive members of the profession. Courses of this kind were arranged on behalf of the Ministry of Health by the Postgraduate School in London shortly before the war for practitioners participating in the National Health Insurance Scheme. They were free of cost to the practitioner and allowances for travelling and maintenance and the cost of a locumtenent were authorized. At first these courses were held in London, but by the outbreak of war in 1939 the scheme had been expanded rapidly and courses had been planned in several other centres throughout the country. It was the intention that every doctor in the National Insurance Scheme should attend a course once in three years. Shorter, intensive courses, usually on limited subjects and extending over two or three days or a week-end, were available here and there throughout the country, and they also were well attended. Courses of these types provide periodic contact only with educational centres. Experience has shown that they have considerable value, but they offer so much information in a short time that much of it is wasted and the educational value is disproportionate to the effort devoted to them by the teachers.

At some hospitals and centres, notably Newcastle-upon-Tyne, another form of contact has been practised for some years. The staff of the teaching hospital set aside one half day in each month when general practitioners visit the hospital and join in a discussion on a previously arranged subject, share in a demonstration of selected cases, or take part in a meeting of the local medical society. This more nearly fulfils the need for continuous education, but is dependent for its success on distance, transport, and other local conditions. At other hospitals similar sessions are held every week.

Each method that has been tried and found successful may well be included in the plans for the future, and it should prove easier under the National Health Service than it has in the past for the general practitioner to attend and for the teachers of experience to be available. Other methods have been suggested, and I have had opportunities of discussing them with considerable numbers of general practitioners released from the Forces who have been attending the two-weeks intensive courses arranged by the Universities under the Government scheme. As a result, I would suggest that a start be made with the following:

(i) Clinical assistantships at near-by hospitals;

(ii) One or two half-day sessions each month at the divisional hospital for meeting the hospital staff and for discussions, according to a prearranged programme;

(iii) Short courses lasting one or two days on recent progress in specific subjects at the regional medical school or teaching hospital; and

(iv) Intensive general refresher courses lasting a week or more, to be attended once a year at a centre remote from the place of practice.

(i) The clinical assistantship is the form of education that has met with the most general approval of the groups of practitioners we have consulted. It might be held for three months in the year and the practitioner would attend one or two half days a week, be assigned duties in an out-patient department, and have access to the wards of the hospital. The department to which he is attached might be a different one each year or he might prefer to concentrate on a few only. These appointments would be held at the divisional hospital or group of hospitals with their staffs of specialists, who would supervise the work and be themselves in constant touch with the regional teaching centre. This form of education could be arranged at first for practitioners in the cities and urban districts, and might be extended later to rural areas also.

(ii) The regular half-day session at the divisional hospital for meeting and discussion with the hospital staff would give the practitioner opportunities also for following the progress of his cases referred to hospital for treatment. The programme need not be confined to clinical subjects and might well include occasional discussions on administrative problems of common or local interest, on the preservation of health, and on historical or other subjects of cultural value.

(iii) From time to time new methods in diagnosis or treatment are developed sufficiently to become widely used, and it is essential that general practitioners should be informed of their possibilities and limitations. The progress in mass radiography, the use of sulphonamides, and the discovery of penicillin are recent examples. Courses of demonstrations and discussions lasting one or two days, and covering the principles as well as the practical applications of the new method, would be of great value. They should be given by experts who have been personally concerned with the development of the subject and should be conducted at the medical school of the region.

(iv) The intensive general refresher course lasting two or three weeks, and attended at intervals of several years, is not entirely satisfactory either for the practitioners attending or for the

teachers. The former are liable to suffer from mental indigestion, and the latter are frequently conscious that the time and energy they have given to preparing their demonstrations and lectures are largely wasted. I have been impressed with the opinion of a number of practitioners attending these courses that the expert in his subject who is not an experienced teacher is seldom satisfactory. And there is much truth in the suggestion that general practice is itself the most difficult of specialties, and that these courses rarely include any discussion or instruction on the common problems that concern them most. There is clearly a need for further experiment, but I have found general agreement that a week's course every year would be preferable to a longer course less often.

In order to carry out such a programme of clinical assistantships, conferences, specific short courses, and general courses of longer duration, and to provide them for all the practitioners in a region, it will be necessary to use the clinical material and the staffs of many hospitals. The undergraduate teaching hospitals cannot be expected to contribute much to these forms of postgraduate education, and the medical schools will need to enlist the co-operation of associated and divisional hospitals. It will be some years before these will be staffed on an approved basis, but a beginning can be made now and the experience gained recently in providing for the demobilized practitioners can be put to good account. The Interdepartmental Committee on Medical Schools advised the appointment of postgraduate deans or directors and a postgraduate committee in each medical school or faculty, and it would seem advisable that this should be done immediately at all Universities with medical schools, as a permanent feature in their post-war development.

The British Postgraduate Medical Federation

The conditions in London are peculiar because of the number of its medical schools, the great concentration of population and hospitals, and its position as the capital of the Empire. To make use of its unique situation in the provision of postgraduate medical education the University of London has established the British Postgraduate Medical Federation. This organization is designed to develop and co-ordinate for postgraduate education the many general and special hospitals, both voluntary and municipal, in so far as they are not required for undergraduate teaching. The aim is to develop University departments properly staffed and equipped for postgraduate students only in all the major specialties, including general medicine and general surgery. It will include from the first the Postgraduate Medical School, where University departments in general medicine, general surgery, obstetrics, and pathology have been established since 1935, and Institutes of Child Health, Laryngology and Otology, Neurology, Ophthalmology, and Psychiatry based on the schools already in existence at the special hospitals at Great Ormond Street, Gray's Inn Road, Queen Square, Moorfields, and the Maudsley Hospital. It was originally proposed that these teaching departments and institutes should be accommodated close to each other and to a central hospital or group of hospitals in a convenient and central situation in London, but this plan appears impracticable at present. A Central Office of the Federation has been established close to the University buildings in Bloomsbury and will endeavour to develop the scattered departments and institutes and co-ordinate their facilities for postgraduate studies. Appointments suitable for the training of specialists will be provided at the hospitals, and courses of instruction on the lines already discussed and adapted to the specialties concerned are being arranged. Institutes in other branches of medicine and surgery, such as dermatology, orthopaedic surgery, genito-urinary diseases, diseases of the chest, and cardio-vascular diseases, may be included later as staff, equipment, and accommodation of a standard approved by the University can be provided, and their facilities for research and teaching can be developed; and there is need for extending those already included.

The Central Office of the Federation will be responsible also on behalf of the University for the organization of postgraduate studies for general practitioners in London and the Home Counties, and one of its most important functions will be to advise or provide for the large numbers of graduates from over-seas, from the Dominions, Colonies, and other countries who wish to come to this country for postgraduate work.

An International Centre of Postgraduate Education

For a variety of reasons a majority of the graduates coming to this country from over-seas look to London to provide what they require, but many of them have traditional loyalties to other centres, especially Edinburgh, and other centres than London can provide better facilities in certain special branches, such as the treatment of industrial accidents, etc. The Central Office of the British Postgraduate Medical Federation in London should become a channel for distribution to all parts of the country, as well as having a peculiar responsibility for its own area, and a source of information on the postgraduate facilities available in the United Kingdom. Situated in the capital and the main port of entry to the country it would be able to gauge the needs of visitors and, if necessary, initiate arrangements for types of education not already provided or for the extension of provisions where these are inadequate.

Because of its geographical, economic, social, and political position the United Kingdom is suitable for the establishment of a great postgraduate medical organization that would attract and serve graduates from all over the world, and we have a special duty to provide such an organization to meet the needs of the peoples and the Universities of the British Dominions and Colonies.

The first aim of this organization must be to provide medical education and training of the highest standard based on University departments staffed and equipped to provide opportunities for advanced study and research. Without this no arrangements, however satisfactory from the point of view of administration or of convenience for the visitors, will succeed, and it will take some years to build up departments on the scale and up to the standards required in all the special branches of medicine and to staff them adequately. In the meantime much can be done to improve the amenities, to welcome the graduates from over-seas, to enable them to spend their time here profitably, and to share our educational opportunities.

Graduates come to this country at various stages in their training and experience and for varying lengths of time. They can be divided roughly into those in need of further education and training and those already established in their chosen careers who come to this country for relatively short periods.

The educational needs of the first group have already been discussed, but in order that they may readily obtain the hospital appointments or places in courses of instruction best suited to their previous training and experience and to the time at their disposal an extensive information service must be provided, and they should be helped to find such essentials as living accommodation conveniently situated to the places where they work. For the second group an efficient service on these lines with help and opportunities to enable them to visit the leaders of the profession in this country and to spend their time here to the best advantage is a pressing need.

As the report of the Interdepartmental Committee on Medical Schools points out, the ideal arrangement in London would be a general hospital and postgraduate medical school with specialist hospitals and institutes grouped around it, constituting a postgraduate medical centre. It should be geographically related to the University, the Royal Colleges, the Royal Society of Medicine, and other cultural bodies. Residential accommodation, dining rooms, reading rooms, library, and other common rooms should be closely associated, and the Central Office for the Director of the British Postgraduate Medical Federation where detailed information would be available to visitors should be an integral part of the centre. Even if such a scheme is impracticable now in its entirety, it should be possible in the future, and it should be a duty of the hospital planning authority to be set up under the National Health Service to allocate a site for it as soon as possible. An influential committee is now considering what parts of the centre should be completed first in order that visiting graduates may be adequately received and their requirements met to the fullest extent possible under present conditions. Because of the destruction or closure of many cultural centres abroad the war has created conditions that make it urgent that we in this country should take action now, even though what is practicable should fall short of what is desirable. Every University and medical school in the country should prepare plans and each make its contribution now, for the help of all will be required. As has

already been explained each medical school will have an important part to play under the National Health Service in the postgraduate education of its own graduates and of the medical men in its area, and it will be able to offer a share in its culture, learning, and social life to our guests from over-seas. The first step should be to make these easily accessible to them, for that would be the strongest proof of our welcome and our fellowship with them. If we plan boldly and wisely now the ways and means are more likely to be forthcoming in due course. Medical men can influence the thoughts of individuals, races, and nations, and this country and its Universities have an opportunity to mould the ideals of millions of human beings through the postgraduate medical education they provide.

To obtain the best results it is important that the graduate should be suitably placed in relation to his previous training and attainments and in relation also to the particular career that lies before him. For this purpose visitors from over-seas should be sponsored by a body in the country from which they come and their applications should pass through approved channels. There are already a number of channels, perhaps too many, such as the High Commissioner for India, the Colonial Office, the British Council, and the Nuffield Foundation, each dealing with a special group of graduates, and it may be right that this should be so and that a rigid system would be inadvisable. There is certainly a need for some agreed method of assessment and approval of applicants in their country of origin by medical men and teachers who are aware of the conditions and facilities available in this country, and for a common procedure for placing in this country by a similar group familiar with the requirements of graduates from over-seas. In this also the Universities should have an important part. The problem for them is not limited to medical graduates, for it includes graduates in all the faculties and also the placing of their own graduates in schools abroad suitable for their further education.

I have endeavoured to show that the National Health Service offers a peculiar opportunity for the successful development and organization of postgraduate education for the medical profession of this country and for ensuring that every medical practitioner, whether engaged in general practice or in one of the specialties, should continue in contact with centres of medical learning throughout his career. If this opportunity is wisely used it may prove to be a decisive factor in making the Health Service a success and a boon to the people of this country. Planned primarily for the medical profession of our own country, such an organization would provide also for graduates from the Dominions, Colonies, and abroad, and our medical schools and hospitals would become a centre of medical study and learning of world-wide importance. I have tried to indicate how a beginning has been made and the lines along which further development might be directed, and that the lead must come from our Universities and Medical Schools. Only they can maintain the requisite standards at this time of expansion and reconstruction, and they will, I hope, be able to raise them. They have the opportunity now, and if they wait till all the desired staff, accommodation, and equipment can be provided they may miss the opportunity. Now is the time to plan, and it is the time also to start boldly.

SOME PRINCIPLES IN THE SELECTION OF MEDICAL STUDENTS

BY

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The recent report of the Interdepartmental Committee on Medical Schools[1] (the Goodenough Committee) drew attention to some of the problems connected with the selection of medical students. The chief points stressed were the following: (1) selection should not be based wholly on examination results; (2) all candidates should be interviewed, preferably by a small committee; (3) great attention should be given to reports from head masters and head mistresses; (4) the machinery for selection should be supplemented by adequate arrangements for weeding out failures in the early part of the training; (5) there is room for experiment in methods of selection; (6) "the selection of students is such an important duty that it demands and should receive a great deal of time and thought from the authorities of the medical schools both in the planning and working of the arrangements." The first three of these points represent essentially the system which is in common use in most medical schools. The weeding out of unsuitable candidates has not in the past been practised on a very wide scale, and if the process is to be more widely applied a number of problems are raised; these will be discussed later. The suggestions about experiment would appear to be a recognition of the fact that existing methods of selection which worked well in the past may no longer be the best possible in changing conditions, and in fact force of circumstances has already compelled a number of medical schools to experiment in their method of selecting students.

Problems to be Solved

The problems of selecting the most suitable recruits for different occupations has been under serious consideration since the 1914–18 war. The tendency has been to try to replace the older methods of chance, tradition, heredity, social position, and economic pressure by conscious guidance of young people into occupations for which they are most suited. This tendency is seen in the attempt[2] to separate children at about the age of 11 into schools which can lead to a university course and into those which will encourage cultivation of other talents more useful outside the universities, and in the great development of tests for ability and aptitude for different occupations. Up till 1939 the medical schools had not been greatly affected by these changes, and while the field of recruitment for medical students was gradually widening no undue strain was put on the machinery for selection. Since about 1939 the problems of the medical schools have been increasing, and it was probably with these facts in mind that the Goodenough Committee spoke of aptitude tests and experiments in selection. Some aspects of the matter have also been discussed by the report of the Committee of the Secondary School Examinations Council appointed by the President of the Board of Education in 1941[3] (the Norwood Committee), by the Royal College of Physicians Report on Medical Education,[17] and from time to time by the medical press; but all these reports have done little more than point out the problems, without discussing ways and means of solving them. The present time, when the future of education in general, of medical education in particular, and of the whole organization of the health services is in a state of transition, would seem to call for a detailed examination of the problem of selection of medical students.

The problem assumes its most concrete form when seen strictly from the standpoint of the selector, and accordingly it is presented from this aspect. The other interested parties are (1) the candidates themselves and their head masters and head mistresses; (2) the medical schools as represented by their governing bodies and by the teachers in the various subjects of the medical curriculum; and (3) not least the community at large, which is going to benefit or suffer from the results of the choice. The selector's duty is to be fair to each of these parties, but it sometimes happens that fairness to one party can be achieved only at the expense of the others. When such a conflict of interests arises the obligations to the medical school and to the community should always be placed before the obligation of fairness to the individual. In general the selector would seem to stand on surest ground if he asks in each case, "Is this candidate the most likely one out of those available to increase the reputation of this medical school, or at least is he or she a person whom we should like to claim as one of our students?" This attitude allows for a desirable individuality in different schools, and will in the long run best serve the general interests.

Applicant/Place Ratio

In the recruitment to any occupation there is a certain ratio between the numbers who wish to enter and the numbers which it is desirable to admit. In each occupation the ratio will

adjust itself to a certain value determined by a large number of complex factors, and will at times vary with changing conditions in the particular occupation or in the community at large. The value of the applicant/place ratio is an index of the task of the selector for each occupation. When the ratio is unity no problem exists; when the ratio has a value less than unity the problem is to attract more applicants; when it is greater than unity the work of selection begins and increases with each rise in the value of the ratio. When it reaches a value of 20 (as it has already done in the case of women applicants in some medical schools) the task of selection becomes a formidable one. In looking for causes of changes in this ratio it can be assumed that among other things the ratio must measure in some degree the popular conception of the conditions of work, the ability required, and the standard of living associated with each occupation. Is there any evidence to suggest the probable direction of change in the applicant/place ratio as regards medicine? This can best be seen by examining separately the two parts of the ratio—the number of places and the number of applicants.

Number of Places

The number of places available in the medical schools can be obtained approximately from the figure for the total annual entry of students, which for the year 1942–3 was 2,250. This figure represents a Government quota based on the average

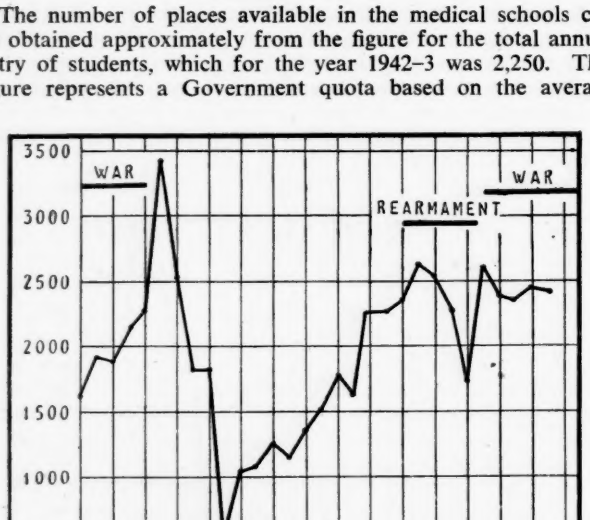

FIG. 1.—Annual entry of students into medicine, 1914–44.

numbers admitted for the three years 1936–9, and can be taken as the average number of places available just before the war. In the post-war years there are three possible factors which may influence the number of places for new entrants into the medical schools: (1) the demand by applicants, (2) the desire of individual medical schools to alter the size of the entry, and (3) a definite national policy to alter the rate of recruitment to the medical profession. Demand for places was in the past a very large factor in determining the size of the entry, and when it increased, as after the last war, schools were willing to increase the numbers admitted. This is evident from Fig. 1, which shows the annual entry for the past 30 years. The demand for places can remain effective in determining the size of the entry only so long as the capacity for expansion of the medical schools has not been reached. As soon as further expansion becomes impossible then increased demand does not lead to an increase in the number of places but only to an increase in the number of applicants rejected. It seems likely that this stage is now being reached, and that numbers of applicants will no longer be a determining factor in the number of available places. The desire to increase or decrease the annual entry is a matter of domestic policy for each individual school. To a certain extent greater numbers mean increased prestige and increased staff and accommodation for research purposes. On the other hand, there is an optimum size for a medical school. While some medical schools are probably still capable of expansion, some, at least in the opinion of the Goodenough Committee, have already exceeded the optimum size.[2] If the recommendations of the committee are taken as a basis for a rough estimate it would seem that a desire on the part of the medical schools to expand or contract to an optimum size might result in an increase in the number of places available to a total value of 2,500.[3] A last possible factor is a definite national policy to accelerate medical recruitment. On the whole it seems unlikely that there will be great alteration in the number of available places in the near future, and probably a more important factor in determining the size of the applicant/place ratio will be the number of applicants.

Number of Applicants

For various reasons it is not possible to get definite figures for the numbers who wish to start a medical career. In most medical schools there is no last date fixed for receiving applications, and places are filled up as suitable candidates present themselves. When enough have been selected and a number of reserves chosen no further applications are considered. Hence figures for the total number of applicants rejected after consideration do not give the total numbers who sought admission, and furthermore they will include applicants who sought admission to a number of schools. In spite of lack of figures, there is no doubt that the number of those seeking admission to a medical career is increasing. In the case of women students it is possible to give some figures which show the present trend. At University College in the early 1930's there were about twenty applicants for twelve places. This number gradually rose in the pre-war years, and by 1939 had reached three figures. From 1939 it rose sharply at a rate of about 100 a year till it reached 400, since when it has slowly risen.

It is true that these figures indicate the position in the abnormal period of war, and they are influenced also by the small number of London schools which accepted women, but nevertheless they demonstrate the very sharp rise in the applicant/place ratio. No corresponding figures for men are available, but the number of male applicants for the recent session at University College is about 500, and numbers approaching four figures are rumoured for some provincial medical schools. The important question is whether these figures are greatly swollen by the war and by demobilization, and whether the post-war years are likely to see the demand for places in the medical schools maintained. The analogy of the early 1920's cannot be considered a reliable guide in the present circumstances, as in many ways the situation following this war differs from that following the last; but it may be helpful to consider the points set out below:

(a) Effects of National Service.—From 1939 to 1945 training for medicine was a reserved occupation, but the war had two effects on recruitment. Many desirable applicants preferred to serve with the armed Forces, while on the other hand the total number of applicants was swollen by those who sought a career free from interruption by conscription. The future effects of national service are unpredictable till details of Government policy are known as regards its application to university students. Two different views on this subject have been expressed by authoritative bodies. The Norwood report[10] favoured the possibility of a six-months break between school and university for a period of national service, while the Committee on Scientific Man-power[19] thought that science students should be allowed to complete their university courses before undertaking national service. Preferential treatment of any one group—e.g., medical students—will undoubtedly affect recruitment in that group. The problem of demobilization is a more temporary one. It has swollen the number of applicants for 1946, and may cause an even greater problem in 1947.

(b) Effect of Parental Influence.—This is probably considerable, and some interesting information on the subject was recently obtained in a survey carried out by the British Institute of Public Opinion.[20] In this survey the following question was put: "If you had a son starting out in life, what kind of work would you like him to take up?" Those who chose medicine as a career for their children amounted to 7.5% of the total number interrogated. (The number of doctors on the *Medical Register* is less than 0.2% of the population.) Of those choosing medicine 40% had a son not yet working, and of this 40% nearly half (42%) thought that the son would actually take up medicine. A nearly equal fraction (36%) thought that the son would not eventually take up medicine, and that he would be prevented by the expense of the training. The reliability

of such a survey for prediction of the future is open to some doubt, but nevertheless the figures do give evidence of the popularity of medicine as a career in the minds of parents. A leading article[20] in the *Lancet* suggested the probable reason. "We must consider the popularity of medicine as a career to be greatly influenced by the general belief that the material prospects are good."

(c) The Ability Needed for a Medical Career.—Evidence on this subject has been obtained by a comparison of the abilities of those who have been selected as medical students with those of the population as a whole in a survey undertaken in Manchester by Leybourne-White.[21] The purpose was to determine what fraction of the population outside the universities is capable of benefiting by a university education. The method of study was to estimate by means of "progressive matrix" tests the ability of the students in the different faculties of Manchester University, and to compare the distribution of intelligence with that in the general population. While it is known that between 1.5 and 2% of the population actually receive a university education, the survey showed that 6% of the total population had an ability equal to the average university student, and 24% an ability equal to the university students who would probably complete their courses successfully. In regard to medicine 9.1% of the population had an ability equal to that of the average medical student, while 17% had an ability exceeding the lowest quartile of medical students. Taking the 1931 Census figure of 709,000 for the size of the 18 age group the number of those at the age of university entrance with ability greater than the average medical student would be 63,000, and the number with ability greater than the lowest quartile of medical students would be 120,000. Since the actual number of medical students admitted to the universities is less than 2,500 it is clear there are fairly large untapped resources, at least as regards ability. Considering now the proportion of parents (7.5%) who wish their children to undertake a medical career it would seem that about 50,000 of those of the 18 age group will be under some parental influence to choose medicine, while over 100,000 will have the ability. No doubt many of these will be unsuited on other grounds for a medical career, but the determination of this unsuitability will rest more with the selector than with the applicants or their parents, and the figures suggest that the post-war demand on the medical schools is more likely to increase than to decrease.

Financial Considerations

(d) The Economic Factor.—If inclination and ability to enter the medical profession are of the order just suggested, the numbers of applicants must be restricted by other factors. Burt[22] studied the general problem of opportunity for university education by inquiring what proportion of the non-fee-paying school population are capable of profiting by a university education, and what proportion of these fail to get it. Out of 700,000 in the 18 age group about 660,000 belong to the non-fee-paying class, while only 43,000 belong to the fee-paying class. Yet of the former group only 5,000 enter the universities, while of the latter more than 6,000 do. In other words, 0.7% of the non-fee-paying class have a university education, compared with 15% of the fee-paying class. Burt inquired whether these figures could be explained by the fact that average ability is actually higher in the higher income groups. He rejected this idea on the ground that the wide range of ability within each income group, combined with the very large size of the lower income groups, must mean that a big proportion, estimated by him at about 40%, of the children in the non-fee-paying class possessed an ability of university standard, and the barrier which stood between these "mute inglorious Miltons" and a university education was clearly the economic one. The effect of financial hardship was not to reduce the ability of the sufferers but to restrict the achievement which might result from that ability.

Data related more specifically to medicine were obtained by Collier[23] in an investigation into the social origins of entrants to Glasgow University. Undoubtedly conditions in Glasgow cannot be taken as typical of those in the country as a whole. The students are drawn from a very large industrial area, and 36% can be classified as of working-class origin. Glasgow has felt more than most other areas the effects of trade depression. Its entrepreneur class, as Collier points out, contains few "merchant princes." In addition the respect for and the ambition to achieve a higher education are more pronounced features of life in Scotland than in England. (The ratio of numbers of university students to total population is 2.5 times higher in Scotland, and the export of university graduates has long been a feature of Scottish life.) Nevertheless, the figures obtained by Collier are instructive. He divided the entrants to the University into the five social classes based on income level recognized by the Registrar-General. Of all the children born into the top class (the upper and middle professional class) 1 in 70 entered the medical faculty, while of the children born into the lowest social class (the unskilled class) the ratio was 1 in 6,000. During the last few decades there has been an increase in the numbers of those admitted to Glasgow University from the lower social groups, but this wider recruitment has affected much less the more expensive degrees of medicine and of law than the cheaper M.A. degree. These results of Burt and of Collier give objective evidence on a position which is very generally appreciated, that the economic barrier is one of the most active agents in the selection of medical students.

Under the economic heading one must also consider the effect of the general economic conditions on the entry into medicine. The figures for entry for the past thirty years (Fig. 1) illustrate the inverse relationship between general economic prosperity and entry into medicine. The years of depression in the early 'thirties were accompanied by a rise, while the subsequent economic recovery was associated with a fall. In Glasgow, where entry to the University is probably more closely bound with local prosperity than in some other places, Collier found that the depression in the early 'thirties caused a fall of 7.5% in the total entry to the University. This was, however, entirely due to a fall in entrants for the M.A. degree. The numbers in the other faculties actually rose, and of this rise medicine accounted for 62.5%. This inverse ratio between economic prosperity and entry to medicine is usually attributed to the relative stability of a medical career in times of uncertainty, and there can be little doubt that for the next few years uncertainty about the future will be part of the background of the thoughts and actions of a large section of the population.

There is one further aspect of the economic factor in the selection of medical students. Whatever principles we use for selection, the economic consequences cannot be disregarded, and however long the reckoning the cost must eventually be met. The balance sheet in such a complex process is not one which can be easily visualized, but at least the outlines of it are suggested in two citations by Burt.[23] "No extravagance is more prejudicial to the growth of natural wealth than the wasteful negligence which allows genius that happens to be born of lowly parentage to expend itself in lowly work"; and again: "Stupidly organized investments in children's capacities, like other stupidly organized investments, will yield little return; well-organized investments adjusted to the natural abilities of the children affected hold out large promise."

(e) Schemes of Financial Assistance.—If parents' income is of major importance in restricting entry to medicine, then a limiting factor will be the ease with which financial assistance can be obtained. Assistance may come from a number of sources: (i) university scholarships and exhibitions; (ii) leaving scholarships and exhibitions from the schools; (iii) State scholarships; (iv) assistance by local authorities; (v) various funds and trusts catering for particular kinds of needs. It is difficult to obtain accurate figures of students receiving some kind of financial aid. The figure of 25% was arrived at by means of a questionary sent out by the British Medical Students' Association.[30] The Goodenough report[4] gave 11% for an English and 43% for a Scottish university.[4] From the point of view of the selector the important questions are: (i) Is the scale of financial assistance likely to increase or decrease? (It is this which will influence the numbers of applicants for medicine.) (ii) Is the award of financial assistance in itself evidence of more than average ability in the recipient—i.e., Is it of any value to the selector to know that an award has already been made? In regard to the first of these questions the Norwood report[11] stated: "The aid is inadequate both as regards the total sum available and the sums made available to individuals." The Goodenough report[4] was more cautious. In Scotland "the faculty of medicine was drawing students from all classes of the community, and given adequate ability lack of means was not a bar to becoming a medical student." In England and Wales, "while a boy or girl with the necessary aptitude need not be hindered by poverty from entry to a medical school, in fact the medical schools are not recruiting from as wide a field, embracing all sections of the community, as other faculties in the university. . . . There is a strong tendency for parents with small incomes not to give any thought to the profession of medicine as a career for their children." The report[18] of the Royal College of Physicians stated boldly: "The field from which medical students are to be selected should be widened by making all university education free, and by the provision of maintenance grants to those students in need." Action on the basis of any or all of these reports is likely to result in financial assistance on a wider scale than at present, and thereby, as we have seen, to increase the problems of the selector.

As regards the ability of the recipients both the Norwood[11] and Goodenough[4] reports criticized the unevenness of the standard required. In some cases it is very high; in others it involves passing Higher School Certificate and being accepted by a medical school. The L.C.C. regulations state: "Candidates who do not satisfy the requirements for an award of a scholarship may apply for a major county exhibition if they have been accepted by a university and have passed the Higher School Certificate or other approved examination." Clearly awards in this class are of no help to the selector, and actually the onus of determining the recipients is put on the selector. But this attitude of local authorities is not illogical. How better could they select the recipients for their awards than by leaving it to those who have experience in selecting for the

profession which the candidate desires to follow? This view was endorsed by the Goodenough Committee[6]: "Provisional acceptance by a medical school should precede the making of an award"; and the report goes on to record the views of other witnesses "that acceptance of a candidate by a medical school should be regarded by the bodies awarding financial assistance as sufficient evidence of ability." Clearly the future developments in provision of financial aid are likely to increase the number of aspiring entrants to medicine, and the general argument developed in this and the preceding sections must point to an increase both in the volume of work of selection and in the responsibility associated with it.

Let us now turn to a consideration of how that work can best be carried out.

Methods of Selection

The basic method of selection in most medical schools is the personal interview, and this is generally agreed to be desirable. Will it be possible in future to interview all applicants, and, if not, what other methods are available to assist the personal interview? Selection by interview is efficient, and indeed physically possible, only when the number of applicants seen can be kept within a certain limit. When that number is greatly in excess of the number of places a preliminary selection can be made by various methods: (1) Closure of entries when enough suitable candidates have been chosen.—This only piles up the number of applicants for the following session. (2) Elimination on strict age limits.—This only postpones younger candidates till the next session. In the case of older applicants it raises some problems, which are dealt with later. (3) Selection on recommendations from head masters and head mistresses.—School testimonials are valuable, but the number who can be eliminated on testimonials is small (the general problem is considered later). (4) Giving preference to certain schools of proved worth.—It is valuable to have contacts with good schools whose head masters help the selector, but the number of schools putting forward good candidates is increasing. (5) Adopting a "zoning" system, in which only applicants from a restricted area are considered.—This happens in some provincial medical schools. The argument probably is that, as the money for the training is raised locally, local candidates should benefit. The grave disadvantage is that it prevents mixing of students from different parts of the country. (6) Holding some kind of preliminary test or examination to assist with the selection—possibly including vocational or aptitude tests.—This is the possibility which offers the most profitable line of experiment and deserves most consideration.

What kind of tests are most likely to pick out the applicants we want?

Qualities and Aptitude

In every discussion of selection of medical students the term "aptitude test" is used. The implication is that objective tests can disclose the possession of qualities specially suited to a medical career. The operative word is "aptitude," and everything depends on how this is interpreted. In the United States aptitude tests have been used for the selection of medical students for some time. The testing was started in 1929, and was soon taken up by the American Association of Medical Colleges, which carried out tests on a wide scale, modifying them from year to year. The kind of test used can be seen from the account given by Flack[32] of the 1931 tests. These consisted of: (1) scientific vocabulary; (2) visual memory for anatomical drawings; (3) memory for descriptive material; (4) premedical information; (5) learning and retention of material; and (6) understanding of difficult printed material. Flack drew the general conclusion that "aptitude tests have gone a long way towards solving the problems of the medical schools." Just what problems were solved is made clear in the report delivered to the association in 1935, from which it was seen that success was judged by the correlation between the results of the aptitude test and those of the medical examinations. The author was aware, however, that this was not the final criterion of success, as the student who had done best in the examinations did not necessarily make the best general practitioner. He held out no hope of finding a measuring stick which will say, "Here is another Hippocrates, Harvey, Osler, or even Mayo."

It is clear, then, that the word "aptitude" means different things to different people. The "aptitude" tests used by the American schools were successful in selecting qualities which were not necessarily the ones needed by doctors. The technical meaning of aptitude was not the popular one. As the present discussion is from the medical aspect rather than the psychological one it is perhaps worth while to consider the meaning of aptitude tests, starting from first principles. We can do this most logically by inquiring what are the qualities we would desire in the final product of our training.

The qualities needed in the various branches of medicine cover a wide range and certainly include the following: intellectual capacity, integrity, ability for hard work, conscientiousness, sympathy, tact, ability to deal with people, organizing ability, manual dexterity, cheerfulness, resourcefulness, ability to make decisions, self-confidence, patience, enthusiasm, interest, staying power, common sense, and many others. In fact there are few useful abilities which cannot be turned to advantage in some or other branch of medicine. If we consider specific ability in different fields of work, then we must admit that skill or ability in physics, chemistry, zoology, electrical and mechanical engineering, photography, drawing, mathematics, handling and care of animals may all find an outlet. So wide is the field of modern medicine and so diverse its problems that scarcely anyone would venture to suggest which of all these qualities or which combination of them is most valuable. When one speaks of vocational or aptitude tests for medicine it is rather difficult to understand exactly what is meant. The Goodenough Committee was doubtless thinking more of experimental work than of the application of any specific tests.

It is known that various tests have been developed in the Services during the war in connexion with selection of personnel for specific tasks, but these are not yet available. Pending further information about such tests it must be confessed that in general the words "vocational" or "special aptitude" applied to tests for selection of medical students are extremely vague if not almost meaningless.

A Simplified Approach to the Problem

At the risk of some over-simplification the large number of qualities which have been listed above as desirable in the medical student might be put into a much smaller number of groups—a process which makes a realistic approach to the problem easier. All the qualities might be arranged into one or other of three classes, which we may call (1) intellectual capacity, (2) character, and (3) interest. (Perhaps manual dexterity could hardly be fitted into one of these groups, but it is of decidedly minor importance and applies to specialized fields within medicine.) Under intellectual capacity is included a number of things: (*a*) ability to pass examinations; (*b*) ability to think in abstract terms; (*c*) ability to form logical inferences from data; (*d*) ability to record one's experiences and to utilize the recorded experiences of others; (*e*) ability to subject opinions and ideas to critical examination. In the term "character" we include those virtues, like sympathy, tact, staying power, etc., which all are agreed are among the qualities we desire. By interest we mean something which without ability and character is of limited value, but combined with the other two is likely to be a powerful ingredient in the make-up of the successful student in medicine or any other field. Of these three groups perhaps those qualities classified under intellectual capacity are the most concrete and objective, those coming under character the most nebulous and subjective, while interest is possibly the most difficult on which to obtain any reliable information.

Assessment of Interest

The measurement, or perhaps more correctly the prediction, of interest is extremely difficult if not quite impossible. It is more liable to change than is intellectual ability or character, and it develops only in active contact with a particular occupation. As medical work more than most other occupations differs so much from anything which the candidate has experienced before, an alleged interest must be of limited value, particularly since it must appear to strengthen the applicant's case. On the matter of interest the school testimonial does not always help, as the future interests of the adolescent are sometimes difficult to predict. As the Norwood

report[12] says: "For some pupils the horizon of occupation is remote." On the whole, attempts to judge applicants by their interest in medicine are not likely to be a reliable or profitable method of selection, and we are left then to make our choice on intellectual capacity and character.

Testing for Intellect and Character

Let us assume that we can apply some sort of test for intellect and character. When we have a small number of applicants it may become necessary to decide which of the two qualities is the more important. To have to make such a choice is always unsatisfactory; the incompetent though well-meaning doctor can be as dangerous as his abler though less honest colleague. In the words of a *British Medical Journal* leader[33]: "It is true that stupid students often make successful doctors, but it is doubtful if they ever make good doctors." This not to advocate ability at the expense of character, but to claim that a combination of the two is necessary. It has been pointed out that a large untapped reservoir of ability exists for the recruitment of medical students. It is just as likely that past methods of selection have left an equally large reservoir of character. The problem tends to offer its own solution by the increasing number of applicants. Provided we can test for character and ability, then each increase in the number of applicants is likely to see an increase in those who will come up to standard in both qualities. Rejection of those who fail in either should give us the candidates we are seeking. When the number is high our standard of both character and ability can be raised accordingly. We want, then, two independent tests or sets of tests—the one for ability, the other for character.

Intellectual ability can be measured by some kind of written examination or test, while character, it is generally felt, can be assessed only by personal contact. With large numbers it is least laborious to subject all applicants to a written test for intellectual ability, and on the results of this a smaller number can be picked out for interview and assessment of character. The problem of selection is now resolved into: (1) What is the best kind of written test for intellectual capacity? (2) What is the best way of conducting an interview for the assessment of character? The two problems are independent. We can experiment with each separately, and a failure in one will still leave us the fruits of the other. If we call neither of these processes aptitude tests we shall avoid the mistake of thinking that our tests are more specific for their purpose than they actually are.

Written Tests of Intellectual Ability

It might seem that the ability of the modern child was as thoroughly assessed as possible by the existing examinations, but actually when candidates seek admission to a medical school there is usually little objective evidence on which to judge ability. The Higher School Certificate Examination might be assumed to be the best standard of assessment, but very few who apply between October and June for admission in the following October have yet sat for this examination. It is usually taken about three months before the time at which entry to the university is sought—i.e., in June for the session commencing in October—and the results are not known until September—i.e., a few weeks before the university session begins. The Ministry of Labour requires candidates to be accepted at a medical school before their eighteenth birthday, and so acceptance, or provisional acceptance, must be given before the Higher School Certificate results are known. Apart from this difficulty, which may be temporary, the different Higher School Certificate examinations vary widely. In addition to those of London, Oxford, Cambridge, Oxford and Cambridge Joint Board, Northern Universities Joint Board, Central Welsh Board, Durham, and Bristol, there are the Intermediate Science Examination and the First M.B., often taken instead. While most candidates for medicine offer physics and chemistry, they differ considerably in the choice of other subjects, the usual being botany, zoology, biology, and mathematics. This diversity of examination and subject makes the Higher School examination unsuitable for comparing the merits of candidates. There are other objections to the Higher School Certificate as a university selection test. The Norwood Committee[13] questioned the value of examinations based on syllabuses as the best means of selecting entrants to the universities, and particularly of the Higher School Certificate. Another aspect of the problem is the value of the usual written examination as a reliable index of ability (see Hartog and Rhodes[34]). All this shows that from the standpoint of the selector the Higher School Certificate is of limited use. It is therefore not surprising that some medical schools are experimenting in examinations for selection of their students, and there may soon be a multiplicity of entrance examinations to the different schools.

There are obvious objections to this development. For the medical schools there is much overlap of effort, and much time and energy of the academic staff is taken away from teaching and research. For the applicant there are still greater disadvantages—only too clearly visible in the case of women now seeking admission to the medical schools. Because of the scarcity of vacancies for women, candidates are advised to apply to several schools, and so have to satisfy the conditions of entry at each. This must lessen the educational benefits of the last years at school—years which should be used to widen the pupil's horizon. School-teachers recognize the problem, and at the 1946 conference of the Assistant Mistresses Association[35] asked that the position of entry of women should be clarified and made more uniform between the different medical schools. An immediate solution to the problem is not obvious. Further experiments in the selection of students are required which must cause a certain amount of difficulty, but it is hoped that teachers and pupils will put up with these temporary setbacks in the interests of a general improvement in the methods of selection.

The difficulties can be lessened by an examination for selection which does not require a fixed syllabus and for which the candidate cannot make special preparation. The only break in school work is the examination itself, and the pupil's education need not be interrupted. This type of examination has already been used by a few medical schools experimenting with selection methods, and it may come to be employed more widely. Such an examination has emerged from a series of experiments during the past five years in the selection of women students at University College, and may be of general interest. Before describing this some possible criticisms may be anticipated. The examination was not an amateurish attempt to disregard the experience of those responsible for the development of the present system of examinations. It is not put forward as the best method for selecting students or even as a good method. Its functions may be better carried out by the suggested reorganization of secondary-school examinations. It represents only an experiment in dealing with a problem which had become too difficult for the existing methods, and details may be of interest to others with a similar problem.

An Experimental Examination

A written test for the selection of women students was first held at University College in the spring of 1942. This examination was a somewhat hurried reaction to a rapid increase in the numbers of applicants, which was making the method of interview unworkable. It proved a great help, and so has been continued with modifications. From 1943 onwards it was advertised in the prospectus and a last day was fixed for receiving applications—originally April 1 but now Jan. 1, which seems to be suitable, and is the date used by some other schools. Most final-year pupils who are contemplating a medical career have made up their minds by that date, and as the results are known before Easter it gives unsuccessful applicants time to change their plans for the following session.

Our earlier attempts to devise an examination depended on interested members of the staff, who thought out questions giving scope for ingenuity, invention, or originality on the part of the candidates, combined with elementary knowledge of physics, chemistry, or biology. For example, we asked:

(*a*) As a test of ingenuity:—What kind of an experiment would you design to show that saccharin is 500 times as sweet as sugar?

(*b*) As a test of reasoning:—What is wrong with the reasoning in the following sentence: "The horse obeys man because its eye magnifies man"?

(*c*) As a test of elementary scientific knowledge:—If you sit down at the dinner table you notice that (i) your knife feels cold, (ii) the mustard on your tongue feels hot, (iii) the table-cloth is neither hot nor cold. Actually all three are about the same temperature. How do you explain this?

(*d*) As a test of powers of description:—Describe in detail one of the following operations: (i) making a cup of tea; (ii) filling a fountain-pen; (iii) making a bed.

We also asked arithmetical questions involving the use of logarithms and calculations based on simple chemical or physical problems. There were two groups of candidates in each year—those who wished to enter the first-year course and those who wished to enter the second. At one time we set different papers for the two groups, while at other times we set the same paper. As the examinations were competitive for both groups the differences in standard of first- and second-year candidates did not matter.

Assessment of Results

The answers were marked on a basis of α, β, and γ. Examiners were asked to be economical with α's and very liberal with γ's, so that candidates who got several α's were probably much above the average. From the result of the examination candidates were selected for interview. The examiners had no doubt that the examination was an improvement in selection, or it might be more accurate to say that it seemed to make the selection less a matter of chance, and it certainly reduced the work of interviewing. We did pick out some good students by these examinations, though it must be confessed that some we picked out were not very good. It certainly reduced the number of failures of women students in the Second M.B. examination.

A few years' experience of examinations of this kind showed some weaknesses and difficulties, and also the possibility of improvements. Our amateurish attempts to test general ingenuity provided many questions which looked ingenious, but which were less so when it came to assessing the answers. Or it would be more correct to say that the results could have been assessed with more certainty if the number of scripts had been 40 instead of 400. Certainly the number of candidates severely limits the kind of questions which can be asked. It also means that assistants have to be called in to help with the marking, and then much of the ingenuity of the question loses its point, as the person who thought out the question is always more interested in looking for the subtleties of the answers.

Experience also showed that numerical questions were relatively limited in value. Their greatest virtue is simplicity of marking, but this is apt to be of the "all or none" kind. If a candidate has done well on other questions one hesitates to exclude her on the grounds of a numerical error, while so many candidates get the correct answer that it does not help much with the selection. A similar kind of objection can be made against questions in physics or chemistry put into a numerical form. The ability to write and understand one's own language we considered an important quality, and we tried to assess this by asking for accurate descriptions of things or processes or by means of a précis. The marking of a formal English essay was too terrifying. Both these tests—description and précis—proved very difficult to assess. Different examiners confessed that they would not like to guarantee a high degree of reliability in their assessments. It must be remembered that we were using as examiners not experts in English but members of the academic staff in the medical faculty. We did this because (*a*) in an experiment of this kind, where much labour is involved, one has to rely largely on the help of people really interested in the particular problem, and (*b*) it seemed reasonable not to look for qualities in prospective medical students widely outside the range of those who were to teach them.

Limitations and Drawbacks

The system of marking results as α, β, and γ is widely used, but it has its limitations and drawbacks. It seeks to avoid the appearance of the fictitious accuracy of a percentage, but it is subject to the same causes of variability as the percentage. Particularly in the type of question we are discussing and with large numbers of scripts there is certain to be a wide variation in the standard of assessment. The latitude in judgment allowed by the α, β, and γ system of marking may sometimes encourage examiners to take less care in trying to arrive at the most accurate assessment possible, and this tendency is increased when the number of scripts to be read is very large. Experience of conducting an examination of this kind makes one consider whether some more objective method of assessment is not available.

There was one other, perhaps more serious, drawback to our examination. The examination should have two functions. It should do the immediate task of picking out the best candidates available at the time; and this our examination did more or less successfully. But it should do something more. It should enable one to accumulate data which can be used for the future. Whether our selection system is good or bad is not something we can know by intuition. We can find out only by recording both the examination assessment and the method of obtaining it, and afterwards relating these to the performance of the students selected. In this way alone can we eliminate what is worthless in our methods and retain what is of value. Actually the kind of questions we used and the system of marking left us with data of little value for future work. Looking back on past results, it was impossible to know or even guess why a particular assessment had been given in any one case and what special feature of the candidate's answer had impressed the examiner. It was also difficult to form an opinion as to the relative value of any particular question for selection purposes. The system did not lend itself easily to progressive experimentation.

In setting out to improve an entrance examination by an experimental method it is important not to underestimate the magnitude of the task. Even if we can record the results and the methods used in assessing there still remains the problem of assessing the product of the selection. At least two or three years must follow after selection before the student reaches the hurdle of the Second M.B. examination, and even then it is difficult to predict how he will do in his clinical studies. Nor is Final M.B. itself the measure of success. The ability to do whatever work is undertaken after qualification is the real ability we should like to test. It is evident that the problem of improving selection by an experimental examination is a long process, and is certainly not one to be solved by any individual or even by any one medical school. Hence the great importance of finding a type of examination to provide more definite data on which the future selector can work.

The "Short Answer" Question

For these various reasons we were led to experiment with a type of question used more extensively in the United States and in this country by those who are interested in the assessment of ability. In the following discussion I propose to call this type of question the "short answer" type in contrast to the "essay" type. The word "essay" is used here not in the sense of the formal essay intended to occupy one to two hours but in the sense that the answer is moulded in essay form—i.e., expressed in the student's own words in properly constructed sentences and arranged more or less into logical paragraphs. The basis of the short-answer question is to substitute for one question of essay type a series of short questions which can each be anwered by a few words or sometimes by a single word only. As this type of question has not been used extensively in relation to medical training and examinations it is worth while to consider some of its advantages.

In the ordinary kind of examination there are three factors—the candidate, the examination, and the examiner. For most purposes the candidate is the unknown and we think of him as the only variable. Actually the examination can also be considered as a test either of the particular questions set or, alternatively, of the capacity of the examiners to assess the results. The variability of examiners is known to be at a maximum with just such general questions as we had been using. If we can eliminate one of the three variables—the examiner—we leave only two—the candidate and the examination—and these are the things which we really want to test.

The first advantage of the short-answer question is the elimination of the examiner as a variable, and this is achieved by choosing questions to which only one answer is possible, so that discussion of the correctness of the answer cannot arise. The entire elimination of the examiner can be achieved by arranging the question so that the candidate is offered a number of possible answers out of which the correct one must be chosen. But to retain at the same time the possibility of the candidate's scoring something between 0 and 100% it is necessary to have a large number of questions of graded difficulty, and this also reduces the element of chance in just happening to ask something which the candidate either may or may not know. The second advantage of the short-answer question is to make it possible to deal with very large numbers of candidates without undue labour and without fear of changing standards in assessing results. In fact, the answers can be marked by a reliable clerk. As against this there is the time spent in setting the questions. These need to be carefully constructed so as to yield the best results; but the time spent is at least interesting, and any lapses do not result in injustice to one particular candidate.

When the marks of the short-answer question have been collected it becomes possible to assess the value of the question for selection purposes in a fairly definite way by drawing a frequency curve of their distribution. How this can be used to assess the question will be explained presently, with examples.

One of the purposes of the non-syllabus type of examination is to prevent special coaching, but even dearer to the heart of the "coacher" than the syllabus are copies of old examination papers. Since in the short-answer question the answer is actually written on the question sheet, which must therefore be handed in, the examination paper never becomes public property.

A Preliminary Experiment

In a preliminary experiment along these lines five sets of questions were chosen, which were intended to be a test of (*a*) elementary science, (*b*) use of English, (*c*) capacity to draw inferences from the written word, (*d*) general knowledge. In the interests of experiment we combined these with essay questions to be answered in the more usual way.* We will deal here only with the short-answer questions, but a statistical analysis of the results of all the questions has been made elsewhere in this issue (p. 367) by J. S. Wilkie. For various reasons it is not desirable to publish the questions in full, but their general form can be seen from a few examples.

1. *Test in Elementary Science.*—Candidates were asked to complete a series of sentences by insertion of a word or a few words in the appropriate space; for example:

Distance is measured in.....
A volt is a unit of.....

The sentences were graded in difficulty. The easiest could be answered by nearly all, the hardest by very few.

2. *Test in Use of English.*—A list of adjectives was given, chosen to include words with a fairly definite derivation, or words with a very precise meaning, or words likely to be confused with others. A series of sentences, each with a blank space, was given, and the candidate was asked to complete each sentence by inserting an appropriate adjective. All the adjectives given did not have to be used. In the following examples the word which ought to have been chosen in each case is given in brackets.

The desire for food is [innate] in the newly born child.
Some animals have [prehensile] tails.

3. *Ability to Form Judgments and Draw Inferences.*—An abstract was given setting out certain arguments, and conclusions based on these. At the end of the abstract a number of statements were made which might or might not agree with what was contained in the abstract. The candidate was asked to say in each case whether the statement was (*a*) correct or (*b*) incorrect; or (*c*) that no evidence was available whether it was correct or incorrect. The judgment of correctness or otherwise was to be based on the information in the abstract, and not on any other knowledge of the subject which the candidate happened to possess.

4. *General Knowledge.*—Two sets of questions were asked. One was to test general knowledge of a "general" kind. The other was to test general knowledge which might be found specially in people intending to take up a medical career; this was meant to be an approach to the question of interest in medicine.

The Results

The candidates' answers give us certain information about their knowledge of elementary science and of general affairs, and of their ability to use words correctly and to draw inferences. What is the value of these results?

(*a*) *Elementary Science.*—It is not pretended that the short-answer question gives us a better assessment of the candidate's knowledge of elementary science than does Higher School Certificate. What it does give is a numerical assessment by which different candidates can be compared as regards their knowledge of certain elementary aspects of science, and we hope that this is correlated with their knowledge of other aspects of science. Suppose we had asked a different series of questions, should we have got exactly the same results? Probably not, but the fact that we asked a large number of questions (about 25) graded in difficulty and covering a wide range makes it likely that our assessment will be as reliable as asking a single question demanding a more detailed answer. What we can say with some definiteness is whether the particular set of questions was of a suitable standard of difficulty for our purpose of selection. Fig. 2 is a frequency curve showing the percentage of candidates

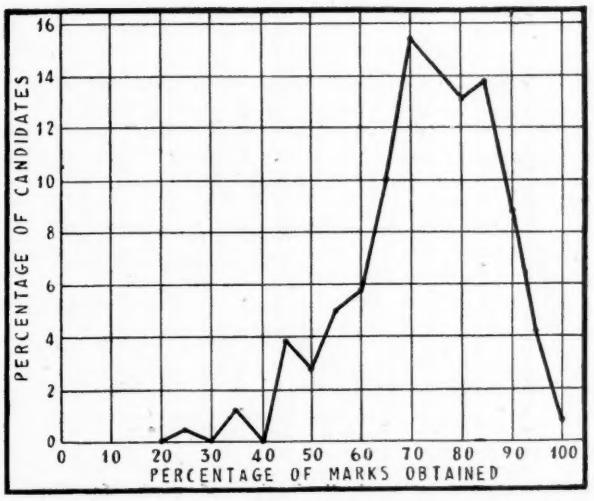

FIG. 2.—Distribution of marks for questions on elementary science (senior group).

who obtained various percentages of marks for the questions in elementary science. The curve is obviously skewed towards the higher percentages. If we had set the examination to eliminate a small number of weak applicants the questions would have been very suitable, but as we wanted to select a small number of the best they proved to be badly chosen. The inclusion of a greater number of difficult questions would have resulted in a skewing towards the lower percentages and would have been much better for our purpose. This is the kind of information which is fairly easily obtained in the short-answer question and is of considerable value for the future. A little consideration will show that if an "essay" question had been set of an equal standard the request to examiners to give a small number of α's and a large number of γ's would have been absurd, and if complied with would have given a distribution of marks which did not correspond with the candidates' performance. With the essay form of answer the absurdity would not have been obvious, and examiners who tried to be helpful might still have complied with the request.

(*b*) *Use of Words.*—Does the numerical assessment we have obtained here represent in any way the candidate's ability to use the English language to express her thoughts? The answer is that we do not know, and we could find out only by correlating the results of our test with some more certain assessment (if this exists) of the ability to use English. It should be made clear that mistakes in the answers did not represent failure to appreciate subtle shades of meaning but were much more in the nature of "howlers," and left no doubt about the lack of knowledge—e.g., "The desire for food is *diabolic* in the newly born child," or "Some animals have *extraneous* tails." The numerical assessment obtained we accept as a measure of some kind of ability in the use of words, with the

* For referring to the statistical analysis by Wilkie it should be noted that the questions cited here appeared in the examination in the following order: (1–5) Questions of essay form not discussed here. (6) Elementary science. (7) Use of English. (8) General knowledge with special reference to medicine. (9) General knowledge. (10) Scientific inference.

proviso that if candidates who do well turn out subsequently to be illiterate we reject the test as a bad one.

(*c*) *Making Inferences.*—Here perhaps we are on safer ground, as the capacity to make inferences probably varies less from one case to another than does the capacity to know the meaning of a certain word or to reproduce a piece of information. In this particular form of question, however, chance plays a part in the result. In each individual section of the question the candidate had three options—"correct," "incorrect," or "no evidence." If she wrote these answers purely at random she had a chance of scoring correctly in one case out of three, so that zero level of assessment is not 0% but 33%. An examination of the frequency curve of the marks

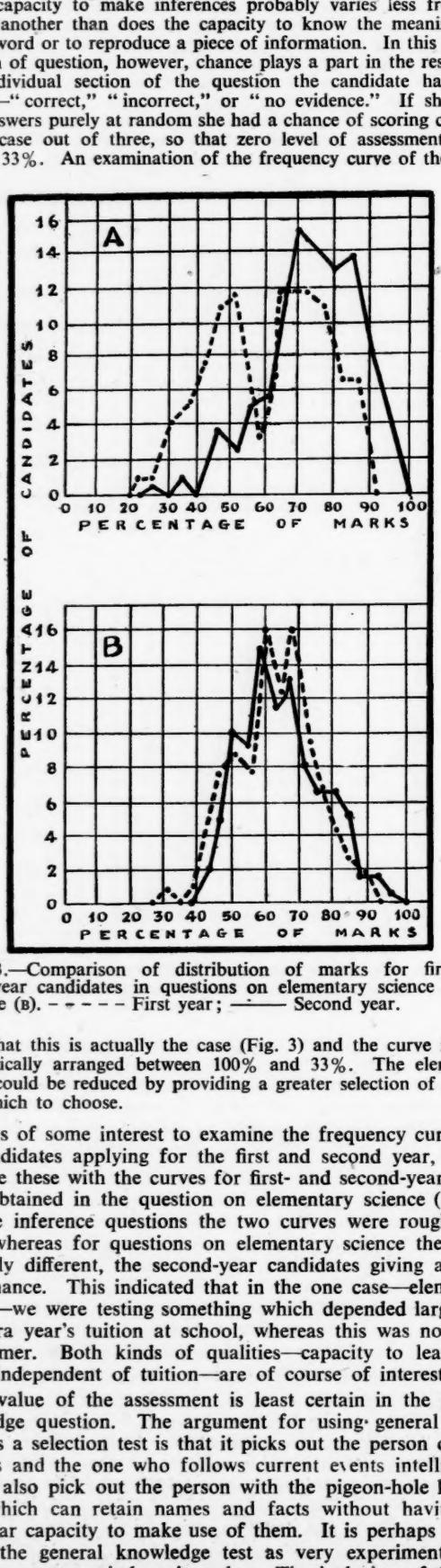

FIG. 3.—Comparison of distribution of marks for first- and second-year candidates in questions on elementary science (A) and inference (B). - - - - - First year; ——— Second year.

shows that this is actually the case (Fig. 3) and the curve is fairly symmetrically arranged between 100% and 33%. The element of chance could be reduced by providing a greater selection of answers from which to choose.

It was of some interest to examine the frequency curves for the candidates applying for the first and second year, and to compare these with the curves for first- and second-year candidates obtained in the question on elementary science (Fig. 3). For the inference questions the two curves were roughly the same, whereas for questions on elementary science they were strikingly different, the second-year candidates giving a better performance. This indicated that in the one case—elementary science—we were testing something which depended largely on the extra year's tuition at school, whereas this was not so in the former. Both kinds of qualities—capacity to learn and ability independent of tuition—are of course of interest to us.

The value of the assessment is least certain in the general knowledge question. The argument for using general knowledge as a selection test is that it picks out the person of wide interests and the one who follows current events intelligently. It may also pick out the person with the pigeon-hole kind of mind which can retain names and facts without having any particular capacity to make use of them. It is perhaps best to regard the general knowledge test as very experimental and to keep an open mind on its value. The inclusion of the part of the general knowledge of a more or less medical connexion was an attempt to test for medical interest.

Assessment by Marks

The selection of the successful candidates must be made on some kind of numerical classification of the results. As we have obtained a definite mark for each question, might these be added up and the best candidates chosen by a process of arithmetic? Before doing so there are some factors to be considered. In the first place not all the questions are of equal selection value. For example, general knowledge may be less important than ability to make inferences. In making decisions of this kind it is well to remember the arbitrary nature of our choice. The modern professional tester of abilities forms his judgments on the relative value of tests much more objectively. He prefers to rely more on a study of the correlations of results of different tests than on his feeling as to what might or might not be a test of importance. However, as amateurs we may regard some questions as more or less important than others. Also the meaning of the numerical assessment is not always the same. For example, in the question on inference we have already seen that 33% represents the zero mark. The simplest and safest method of assessing the total performance is to arrange the marks of all the questions so that candidates can be divided into quartiles or percentiles. In order to draw up a list for interview, candidates in the bottom two quartiles in all questions are eliminated. If this leaves too few, only those in the last quartile are eliminated. If it leaves too many, one can begin at the upper end and pick out for interview all who come into the top two quartiles in all questions, or perhaps those who come into the top two quartiles in questions to which we wish to attach more importance. By a continuation of this process a list of any desired size can be made out. If one adds to this any candidate who appears in the top decile of any question, then the chance of overlooking any good candidate through a freak bad result in one question is eliminated. The final adjustment of the list will be made in a somewhat arbitrary manner, taking into consideration the school testimonials in the borderline cases.

General Conclusions

Our general conclusion with regard to these experimental short-answer questions was that they were of great value and deserved further trial and experiment, and this is supported by the statistical investigation carried out by Wilkie (see p. 367). The chief advantages were: (1) very great reduction of labour in correcting scripts; (2) greater feeling of confidence that the same standard had been maintained for all candidates; (3) a more exact knowledge of the grounds for the numerical assessment in each question, and associated with this more standardization of the selection method, more opportunity of collecting data about the results, and more possibility of seeing how questions could be improved in subsequent examinations. To the psychologist it may seem that we are starting rather naïvely on a problem which has already been brought to a much more advanced stage, and that our experimental efforts to standardize our methods could be short-circuited by the adoption of well-known already carefully standardized tests. It must be remembered, however, that we had to deal with the problem as amateurs, and the presentation of our results is for amateurs like ourselves. If the results of our experiments convince us of the need for professional assistance, then they will not have been in vain. The question of selection by experts is discussed later.

Testing for Character

We have assumed that testing for qualities of character is to be left to interview. All authorities have stressed the importance of character as distinct from ability. Is it possible to adopt any principles for testing character? The case for leaving this as the most important function of the dean of each school has been well stated by Lord Moran,[29] while the Goodenough Committee[7] suggested that interviewing was probably best done by a small committee, and that attention should be given to methods developed in the Services. Until these are made known we must approach this difficult problem independently.

The specific questions we have to answer are the following: (1) What qualities is the selector looking for in each case? (2) Can these qualities be quantitatively measured and

recorded? (3) How can the results of the selection be assessed? and (4) How can we pick out for the job of selection the people with the greatest aptitude for it?

To tell anyone how to judge character at interview, even if one knew, would not be easy. Ability to judge character is one of the qualities most people think they possess in high degree, and certainly medical men are no exception. It is difficult to know on what each one bases his judgment, as indeed it is to know on what one bases one's own judgments. In practice all one can say to one's selecting colleague at the end of an interview is, "How do you like this candidate?" and each person's views, whatever the basis for them, are finally expressed as a like or a dislike. The liking or disliking must then be the thing on which the ability of the selector is to be measured. The good selector is he who "likes" candidates who ultimately turn out to have the traits of character we require. The quantitative assessment of like or dislike can be roughly recorded in several ways. Each candidate might be put into one of a fixed series of classes: e.g., Class 1—a candidate to be had at all costs; Class 2—a very desirable candidate; Class 3—a good candidate if no better available . . . Class *n*—not to be taken under any conditions. Another method is to record each candidate's assessment at interview by a figure for "percentage desirability," based on some arbitrary scale. What these figures mean in relation to the character of the candidate is open to some doubt, but what they mean to the selector is fairly clear.

In looking for a method of assessing the results of selection one turns to the somewhat analogous problem of assessing the results of clinical treatment. In comparing different operations the surgeon is not satisfied with an impression that one procedure is rather better than the other. He looks for objective evidence in the "follow-up." The treated cases are re-examined and their symptoms recorded 6 months, 1 year, 5 years after treatment, and a figure is obtained which expresses the value of the treatment in a more or less objective way. Could a similar method be applied to the work of the selector? It would mean some officer of the medical school giving a good deal of time to collecting periodical reports on the "character" of the students from members of the teaching staff most in contact with them. One may feel slightly alarmed at the possibility of this developing into a "Gestapo" system of checking the students' activities, but this of course is not what we want. A tactful dean could find out much of value to record about the students' traits of character without becoming a detective. The process would depend, as even the most objective physical measurement ultimately depends, on the person entrusted to carry it out.

The selection of medical students has been criticized from many quarters. The British Medical Association in their evidence to the Goodenough Committee[1] stated: "The methods of selection fail to exclude a number who, though able to pass examinations, have not the necessary aptitude, character, or staying power for a medical career." In the world of sport, when the performance of a representative team fails to satisfy its followers the question is soon asked: "Who selects the selectors?" Let us apply this question to the medical schools.

Selecting the Selectors

The selectors are appointed in different ways in different schools. In some cases the dean or other officer of the Faculty makes the selection; in other cases a committee is chosen for the purpose. The dean of the medical school is probably not chosen specially for his selecting abilities, but more for his general administrative capacity and leadership. The members of the committee are chosen probably as representing various interests within the medical school. Selecting ability may be present in either case, but is probably not very consciously picked out. It may be that experience is more important than innate ability in selecting, but it would seem possible that there is such a quality as ability to judge character. If there is, then it should be used; if not, much humbug could be saved by recognizing its non-existence. The following method might elucidate this point and also help us to find the best selectors.

The candidates, already selected with regard to ability, appear before the dean or the committee. As a result of the interview each candidate's desirability is expressed and recorded. In the case of selection by committee there may be a joint interview or a series of separate interviews. In either case it is important that an independent assessment should be made by each member of the committee before there is any general discussion of the candidate's merits. Subsequent discussion must lead to the final assessment which will decide the candidate's immediate fate, but for purposes of selecting the selectors we are interested in a permanent record of each independent individual assessment. These individual assessments will be kept and subsequently compared with the results of the 1-year, 2-year, 5-year, or *n*-year follow-up. Initially each person would undertake to serve on the selection committee for a certain term—e.g., 3 years. By this time some results of the follow-up would be available. If it appeared that someone had made more bad guesses than his colleagues he would retire from the selection panel, and be replaced by a new selector. Those who seemed to be more successful would be asked to continue with the work.

If this method seems clumsy, laborious, and uncertain, let us bear in mind that so is the clinical follow-up in many cases. "The object of science," said Galileo,[36] "is to measure what can be measured and to make measurable what can be made measurable." In the process of investigating ability to select we must consider ourselves at the stage of making measurable rather than of measuring, but then in every new field of work this is the natural order of progress.

Weeding out the Unfit

The view of the Goodenough Committee[7] with regard to weeding out the unfit at an early stage in the training can be interpreted in two ways. It might mean the process as carried out at present, with perhaps a little more strictness in the application. This means essentially weeding out those unable to pass their examinations after a certain number of attempts. In spite of selection the occasional academic failure will probably still be found. But weeding out misfits could be applied in another way. We might accept a greater number of medical students than we intend should complete the training, and then at a given stage select an arbitrary percentage of these for further training, or at least select the really successful students, in contrast to the present system of eliminating the obvious failures. The greatest difficulty in this process would be the responsibility of rejecting students on any other than academic grounds. Another great difficulty would be that with the present medical curriculum the rejection, if it were to be at an early stage, would have to be made before the students had started any clinical work—i.e., before it could be seen how they developed in this most important part of their career. In the Services the selector could weed out the misfits at any stage of the training, and they could turn to another occupation with no great feeling of injustice or without waste of time and money in commencing a training which was not to be completed and put to use. But a medical training has little in common with the special short Service courses, and the ruthless weeding out of misfits would raise difficult problems in civilian life. Browning[37] has suggested wholesale weeding out from a large number of starters as the basis of selection of future medical personnel. It would be of interest to know exactly what the Goodenough Committee had in mind when they spoke of weeding out the unfit. Did they think of weeding out on any other grounds than academic failure, and did they consider the full implications of this?

Some Miscellaneous Factors in Selection

Age

A present tendency is to draw candidates from a rather wide age group. On the youthful side this is because of fear of not being accepted before the eighteenth birthday, and also because of a feeling that the long medical course needs as early a start as possible. Against these fears most medical schools rightly insist that applicants should reach a certain maturity and educational standard before acceptance. The problem of the older applicant is more difficult. We shall omit the case of the Service man, who must receive special consideration. What consideration should be given to the applicant of 25 to 40 whose claims compete with those of the 18's and 19's? The usual story is that the older applicants always wanted to do medicine but could not afford it, and that change in circumstances now makes a medical career possible. If the problem is looked at from the general interest standpoint then it must

be said that the years of medical service expected from these older applicants will be small in relation to the expensive training. This applies in particular to applicants who will be over 40 by the time of qualification. From the point of view of the teacher these older applicants often have difficulty in keeping up with the academic pace of those who are younger. The amount to be learnt in the medical training puts a heavy burden on the older man or woman, as age seems to restrict the powers of mental digestion no less than those of physical. On the other hand there is the occasional person who has qualified in another branch of science—e.g., physics or chemistry—and who turns to medicine with special talents which he can develop in the wide field of modern medical research. Such persons bring a fresh attitude to medical problems, and their selection does not cause great difficulty, as outstanding ability will always justify the risk taken. The problem of the older woman is rather different. The selection of any woman as a medical student is always a risk from the standpoint of years of service, as some of those who qualify give up medicine because of marriage, or at least continue only on a part-time basis. It is arguable, then, that the older woman, less likely to get married, may work more years than her youthful competitor. Every selector is aware of this, but where the claims seem evenly balanced it is difficult not to give youth the preference.

Sex

This is not the place to discuss the lack of opportunity for women in medicine. That is a matter for the general policy of the medical school and is not one which confronts the selector, as the decision regarding numbers of women to be admitted has been made before selection begins. The main interest for the selector is that provision of more places for women students may ease the selection of women candidates; but if more places are provided for women at the expense of men then the problem of selecting the latter will be correspondingly aggravated.

Heredity

Succession of father by son is common in medical practice, and Collier's Glasgow survey[31] yields some quantitative information. The proportion of doctors' children who entered the University out of the total number of doctors' children born was 1 in 7.2 (sons), 1 in 17.3 (daughters), and 1 in 10.3 (total). In the case of sons this ratio was higher than for any other profession. As regards daughters it was only smaller than that for teachers and clergymen. The proportion of doctors' sons entering medicine in relation to the total number of doctors' sons entering the University was 83%—much higher than in any other profession. Finally the percentage of doctors' children in the total entry into medicine was about 10. "Self-recruitment" is generally favoured by the medical schools, and in some cases the tradition of the son entering his father's school is cherished. Provided the boy has ability and character the family background of medicine is likely to be valuable, and he at least has some idea of the strenuous life to which his choice of career is leading him. Only in one respect is a warning needed: the doctor's son runs the greatest risk of being persuaded by parental pressure into a career for which he has no talent and no interest, and subsequent failure will be felt most bitterly.

The School Testimonial

It is agreed that the teacher's opinion on ability and character is of great value. But do we make most use of this knowledge? According to the Norwood Committee[14] evidence from business houses showed that "neither School Certificate nor the head master's letter tells them what they wish to know about an applicant." The committee recorded, however, that much valuable work has already been done in the devising of effective school records, though much more needs to be done. The ideal school record, as envisaged by the Norwood Committee,[15] would greatly help selectors of medical students. "By a school record we mean a history of the child's development compiled by teachers who have known and taught him; it would contain an objective record of progress, with notes on special circumstances deserving to be taken into account; it would furnish a progressive judgment indispensable for decision as to his most appropriate education in the future, and it would guide those who were later charged with that education." The recommendation of the committee[16] shows how much importance it attaches to the school record. While it is hoped that the recommendation will be followed, Burt's claims[24] for modern objective methods should also receive attention.

Selection by Experts

Medical students are normally selected by those who, whatever their professional status, are amateurs in the matter of selection. Should the amateur select when the expert is available? By experts is meant the vocational psychologist who specializes in testing for ability of various kinds. The value of such testing has been recognized much more widely as a result of war experience, and the Goodenough Committee[1] commended the methods used to the consideration of the medical schools. But the teaching staff in medical schools may feel that while the psychologist is expert in the technique of testing he is an amateur in dealing with medical matters. There is even sometimes a feeling of alarm at the idea that psychologists should take part in selecting medical students. "I know the right kind of boy for medicine when I see him," is a not uncommon expression of opinion, and it represents the honest view that the psychologist is the wrong person to select candidates for a profession in which one of the cardinal virtues is to have both feet firmly planted on the ground. This is perhaps partly due to a misconception of what is meant by a psychologist and what the claims of the psychologists actually are. "Psychologist" here means the person who has specialized in testing abilities and aptitudes, and not the psychiatrist or psycho-analyst. The psychologist's claim to test aptitude for a medical career would, I imagine, be modest, and so far not loudly voiced in this country. I am indebted to Sir Cyril Burt for permission to quote his informally expressed opinion. "You probably do not know what combinations of qualities you are seeking. If you did know I probably could not tell you how to test for them. One quality, however, you do want among others: it is that quality which is used in every purposeful, thoughtful action to solve any kind of problem, and which is called variously intelligence, all-round intellectual ability, or more technically the innate cognitive factor. This quality can be tested by methods which are well standardized. If you make a preliminary selection on this basis and pick out the best of those selected by an interview or by any other method you like you will have improved your selection in one respect at least."

The psychologist measures this all-round mental ability by the intelligence test. A wide range of such tests exists, and they have been standardized to an extent far exceeding any other type of examination. The results are expressed as the mental age, or the Intelligence Quotient; and provided the test used has been standardized the accuracy of the numerical assessment varies within known statistical limits.

Use of Intelligence Tests

The application of intelligence tests in the selection of medical students is not a new idea. They have been widely used in America, and were employed in an experiment on selection of medical students at Edinburgh[27] some years ago. More recently Edholm and Gibson[28] applied the tests to different groups of medical students. This *Journal*[33] advocated the use of intelligence tests to help to deal with large numbers of applicants, and one medical school at least has tried this out. The whole position must be regarded as experimental and not one where figures are available to prove its value. Indeed, Edholm and Gibson found considerable discrepancy between the results of the Progressive Matrix Test and those of the medical examinations. There is no doubt that the trying out of existing tests and the designing of new ones to use in selecting medical students offer much scope for co-operation between the psychologist and the medical schools.

One question might arise in connexion with the routine use of intelligence tests for selection. If it is known in the schools that intelligence tests are used, will the schools start coaching for them, and will education be replaced by a system of cramming for intelligence tests? The answer is that well-designed intelligence tests cannot be coached for, and their use in selection for other occupations has given no cause for anxiety in this direction.

Getting the Best Candidates

It has been pointed out that the restriction of the field of selection is very largely financial, and that with this rectified the number of candidates will probably greatly increase. Suppose we had no financial barriers, should we get the best possible students? This does not necessarily follow. A number of the ablest pupils from school who are not lured by money turn away from medicine because it seems to offer less scope for their abilities than pure science. Is it worth while to try to increase the selector's problems still further by taking other measures to attract the very best applicants? The answer is undoubtedly, Yes. The idea still prevalent in some schools that medicine is a career for the warm heart and second-rate intellect must be broken down. The importance of looking for the best in addition to looking for the good in the intellectual sphere has been stressed by Burt.[23] "The tacit habit of treating the symmetrical curve of mental ability as entailing a corresponding symmetry in the curve of mental output has led us to underrate very grossly the extraordinarily high output of which the supernormal child is capable. The ultimate returns to the community to be gained by investing public funds in the tasks of discovering supernormal individuals are far above what we have hitherto been led to expect."

Conclusion

A number of points have been discussed in regard to the selection of medical students. The general conclusion is that the number of applicants for the medical profession is not likely to decrease in the immediate future, and that the machinery of selection is likely to be strained. The problems of the selector are difficult, and it is suggested that the approach should be an experimental one. The difficulties and the labour involved in the process of experiment and selection are balanced by the great opportunity to increase the standard of entry into the medical schools; and this is not to discredit the standards of the past. The experiment is a long-term one, and the immediate need is to standardize methods and collect data. Nor is there any need to fear that in doing this we shall lose the personal approach to a problem where so many intangible issues are involved and where so much can be done by the wisdom and experience of the individual. In the preface to his book on mental and scholastic tests Burt[25] made this point clear. "The scientist may standardize the method; to apply that method and to appraise its results demand the tact, the experience, and the imaginative insight of the teacher born and trained."

I am indebted to the British Institute of Public Opinion for supplying figures not included in their published survey, and to the General Medical Council for figures for the annual entry into medicine.

REFERENCES

1 Report of the Interdepartmental Committee on Medical Schools (1944). H.M.S.O., London, p. 106.
2 Ibid., pp. 113, 126.
3 Ibid., p. 113.
4 Ibid., p. 101.
5 Ibid., p. 102.
6 Ibid., p. 103.
7 Ibid., p. 107.
8 *Curriculum and Examinations in Secondary Schools* (1941). H.M.S.O., London.
9 Ibid., p. 15.
10 Ibid., p. 23.
11 Ibid., p. 38.
12 Ibid., p. 8.
13 Ibid., p. 34.
14 Ibid., p. 33.
15 Ibid., p. 17.
16 Ibid., p. 47.
17 Royal College of Physicians of London Report on Medical Education (1944).
18 Ibid., p. 5.
19 *Scientific Manpower* (1946). H.M.S.O., p. 18.
20 British Institute of Public Opinion Survey 127 (1945).
21 *Report on Capacity and Opportunity for University Education* (1946). University of Manchester.
22 *Brit. J. educ. Psychol.*, 1943, **13**, 83.
23 Ibid., p. 97.
24 Ibid., p. 135.
25 *Mental and Scholastic Tests* (1922). London.
26 *Lancet*, 1936, **2**, 525.
27 Ibid., 1936, **2**, 1490.
28 Ibid., 1944, **2**, 294.
29 Ibid., 1944, **2**, 277.
30 Ibid., 1944, **2**, 299.
31 *Sociological Rev.*, 1938, **30**, 161, 262.
32 *J. Amer. med. Ass.*, 1936, **107**, 61.
33 *British Medical Journal*, 1944, **1**, 665.
34 *The Marks of Examiners* (1936). London.
35 Association of Assistant Mistresses. Report of 62nd Annual Conference, Part 1, p. 52.
36 *Ciba Zschr.*, 1944, **93**, 3295.
37 *Glasg. med. J.*, 1946, **27**, 63.

ANALYSIS OF RESULTS OF A TEST GIVEN AT UNIVERSITY COLLEGE, LONDON, FOR THE SELECTION OF WOMEN MEDICAL STUDENTS FOR THE SESSION 1945–6

BY

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This paper contains a detailed analysis of the results of the last test given at University College, London, for the selection of women medical students. This is the test to which reference is made by Dr. Smyth (p. 357); and the question devised by himself, the result of which appears in graphical form in his paper, is here referred to as Question 10.

Method of Testing

This test may be considered as consisting of two or of three parts:

Divided into Two Parts.—(1) The first part consists of five questions in the usual "examination" form. These are answered by continuous passages of prose, and are marked with alpha, beta, and gamma; sometimes with plus and minus signs appended to the letters. These classes have been translated into numerical form (by the examiners), and the numbers so obtained figure in the totals of the test in such a way that each of the five questions accounts for a possible 100 marks. (2) The second part of the test consists of Questions 6 to 10. These are set in the form of a questionary—the usual form for verbal material in a group test. Each question comprises a set of sub-questions to which answers have to be selected from a certain given number of words. Thus the second part of the test is marked with much greater ease and reliability than the first part. The examiners have again given the marks in percentages, so that each of these questions also has a possible value of 100.

Divided into Three Parts.—We may also divide the test thus: (1) The first part consists of Questions 1 to 5, considered as tests of scientific aptitude and intelligence. (2) The second consists of Questions 6 to 9, considered as tests of general knowledge and instruction. (3) The third part consists only of Question 10, which from its form and from the fact that the younger students ("first year") do not, as a group, score significantly less than the older ("second year"), may be considered as a test of intelligence; at least, it seems safe to assert from a study of the question itself that whatever it tests is an ability or a group of abilities which would be desirable in a student of medicine.

Nature of the Test

The first question to decide is the nature of the test as a whole. What is the value of each of the ten questions, supposing that the test as a whole is valid? With this in mind each question was correlated with the total marks, taking the first year and the second year separately. The correlations are given below with the standard error of each correlation.

	First Year (No. of Candidates, 118)		Second Year (No. of Candidates, 258)	
	Correlation	Standard Error	Correlation	Standard Error
First part of test:				
Q. 1	0·385	±0·078	0·281	±0·057
Q. 2	0·482	±0·071	0·444	±0·050
Q. 3	0·486	±0·070	0·447	±0·050
Q. 4	0·616	±0·057	0·539	±0·044
Q. 5	0·385	±0·078	0·400	±0·050
Second part of test:				
Q. 6	0·549	±0·064	0·451	±0·050
Q. 7	0·806	±0·032	0·679	±0·034
Q. 8	0·701	±0·047	0·596	±0·040
Q. 9	0·638	±0·055	0·624	±0·038
Q. 10	0·327	±0·082	0·504	±0·046

It will be seen that the larger correlations in both years are found chiefly in the second part of the test. Question 10 in the first year presents a low correlation, and it was at first thought that an explanation must be sought for this; but, as

we shall see, the difference between the correlations of the two years is not significant.

Taking the average correlations for the two years together, we find:

Questions 1–5, average of the ten correlations: 0.447 ± 0.04
„ 6–10, „ „ „ „ „ 0.588 ± 0.03

The difference is 0.141, and its standard error is 0.05. It may therefore be taken that the difference is significant.

If we now remove Question 10 from the second part and sum its correlation with those of the first part, we shall obtain a contrast between those questions which might be supposed to depend on intelligence or general scientific ability and those (Questions 6–9) which appear to depend rather on general knowledge or culture. Here the averaged correlations are:

Questions 1–5 and Q. 10, correlated with the totals of the test (12 correlations): 0.4415 ± 0.042.
Questions 6–9, correlated with the totals of the test (8 correlations): 0.6309 ± 0.031.
Difference: 0.189 ± 0.05.

These differences are all in favour of the second part of the test, and this remains true even if we consider the "general knowledge" questions of this second part alone—that is, after the removal of the "intelligence" Question 10. The differences are not very great, but they allow us to say that the general knowledge questions have *at least* as much weight in the totals as have the other questions.

Value of the General Knowledge Questions

So far we have taken the totals as reliable—that is, we have assumed that the test as a whole does select the desirable candidates, and have considered the value of the parts in relation to the whole. Admitting that the test is at least as much one of general knowledge as of intelligence or scientific ability, we still have to attempt an answer to the questions: How far does general knowledge of the kind investigated by the test constitute a desirable part of such a test? How does it correlate with general scientific ability? The questions include no standardized test of intelligence, but we may assume that Question 10 is a test of intelligence and possibly of other qualities desirable in a medical student. For instance, the mode of application of intelligence is one which would be useful in the treatment of scientific problems. It is also possible that some other ability is tested by this question; it might be also a test of self-confidence—but again this is not an undesirable quality in a medical student.

In the absence of any other measure of intelligence let us accept this question as such a measure and see how it correlates with the other parts of the test. As a preliminary study this question was correlated with each of the questions in the first part (Questions 1–5) in the first year. These questions might be expected to correlate highly with a test of general scientific ability, but in no case was there any significant correlation; in some cases the correlation actually obtained was negative. This does not mean that no positive correlation exists, since the numbers are small (118) and the difficulty of marking is great, but we may be sure that there is no *high* correlation between these questions and the one (Question 10) chosen as criterion.

It may here be noted that Question 4 was unusual in that the average score of the first year did not differ significantly from that of the second year. This might be accepted as proof that this question is a test of "intelligence" (it also bore signs of exceptionally careful marking); nevertheless it did not correlate significantly with Question 10. It follows, then, either that the absence of a significant difference in averages is not a sufficient proof that a test is one of intelligence, or that the application of intelligence is of various kinds. It is in fact usual in an intelligence test not to rest content with one type of question, but to give a wide range, so that all types of application may be sampled.

Having, in this preliminary trial, failed to find significant correlations, a more extensive investigation seemed to me to be indicated. I now took the figures from the second year, in which the number was greater (258), and, so as to overcome to some extent the unreliability of marking in the first five questions, I added together the marks for all five questions for each student and made my correlations with the resulting marks.

The results of correlating the totals of Questions 1–5 with Question 10 are given below. For comparison, the results of correlating the totals of Questions 6–9 with Question 10 are also given.

Qs. 1–5/Q. 10 ..... $r = 0.206 \pm 0.060$
Qs. 6–9/Q. 10 ..... $r = 0.294 \pm 0.057$

It will be seen again that, though the difference between these correlations is not great, it is in favour of the general-knowledge questions. It appears, then, that on the results of this test the questions in general knowledge,* besides their intrinsic value in the selection of medical students, are at least as reliable as tests of intelligence and general ability as the more academic type of question represented by Nos. 1–5.

In comparing the first and second years one question which arises is whether, in any case, one group is more consistent than the other—that is, whether it has a greater or lesser scatter. This can be judged by comparing the standard deviations. In no case was any significant difference found.

Questions Separately Considered

The next part of our study consists in considering each question separately. Here the chief interest centres about the differences in average scores for the two years; in other words, which year did better as a group on each question. As we should expect, on the whole the second year has an advantage over the first, except in those questions which in general form approximate most closely to those of standard intelligence tests. There are, however, two interesting exceptions. In the first two questions the first year did significantly better than the second year.

Without being too litigious I think we may say that this is an additional defect of the first part of the test. It is difficult to imagine what useful quality could be better developed in younger students. Intelligence certainly would not be more fully developed at an earlier age than at a later, and all training and acquisition of knowledge should give the advantage to the older student. However, without further investigation it clearly would not be wise to insist on this point. It is not difficult to think of circumstances which might have had a prejudicial effect on some of the studies of the older group, since both groups received their education during the war, but at different periods.

(Note: In repeating the figures of correlations I have simplified some of them so that they do not agree exactly with those given above. The significance of the figures is of course in no way affected.)

Question 1.—This question involved observation of some easily seen physiological reactions of the human body. The correlations with the total scores were:

First year: $r = 0.385 \pm 0.08$
Second „ : $r = 0.281 \pm 0.06$

The correlation in the case of the second year was the lowest obtained in correlating the results of the separate questions with the totals.

Average of first year: 53.6
„ „ second „ : 50.0

The first year did better on this test, the difference being 3.6 and the standard error of the difference 1.3. Hence the difference is significant. I do not know why this should be so.

Question 2.—A question concerning methods of teaching two school subjects. The correlations with the total scores were:

First year: $r = 0.482 \pm 0.07$
Second „ : $r = 0.444 \pm 0.05$
Average of first year: 50.4
„ „ second „ : 45.8

The first year did better than the second, the difference being 4.6 ± 1.7. It may be that the younger group were in a better position to remember the details of teaching of school subjects.

* This does not, of course, apply to *any* questions in general knowledge, but only to those given in this test. No prediction can be made about a question till it has been tried out.

Question 3.—A question in general biology, not to say agriculture and fisheries. The correlations with the total scores were:

First year: $r=0.486\pm0.07$
Second „ : $r=0.447\pm0.50$
Average of first year: 38.2
„ „ second „ : 42.4

The second year did significantly better than the first, the difference being 4.24 ± 2.13. The difference is thus probably, but not certainly, significant. The second-year students may here have been able to apply their better knowledge of biology.

Question 4.—This was a set of questions more like those of the familiar intelligence tests; it involved the use of the concepts of proximate genus and differentia of species. The correlations with the total scores were:

First year: $r=0.616\pm0.06$
Second „ : $r=0.539\pm0.04$
Average of first year: 43.14
„ „ second „ : 42.64

The difference was 0.50 ± 2.06; hence the difference was not significant. This was the only case, except Question 10, in which there was certainly no significant difference between the averages. Considering the form of the question, it is probable that it is in fact a test of intelligence, though not of the same mode as Question 10.

Question 5.—This was a straightforward calculation of the strength of a chemical solution, given the necessary data. The correlations with the total scores were:

First year: $r=0.385\pm0.08$
Second „ : $r=0.400\pm0.05$
Average of first year: 27.7
„ „ second „ : 36.32

The difference was 8.62 ± 2.54.

Question 6.—This was set in questionary form, involving the use of scientific terms in the appropriate context. The correlations with the total scores were:

First year: $r=0.549\pm0.06$
Second „ : $r=0.451\pm0.05$
Average of first year: 60.8
„ „ second „ : 75.5

The difference was 14.7 ± 2.04. Even for the first year the question was too easy, and very much so for the second year. Comparison of this question with the previous one is interesting. The students knew the terms but could not do the calculations.

Question 7.—This was a questionary involving the use of unusual adjectives in appropriate contexts—the context being given, the adjective to be chosen from a given list. The correlations with the total scores were:

First year: $r=0.806\pm0.03$
Second „ : $r=0.680\pm0.03$
Average of first year: 46.7
„ „ second „ : 58.3

The difference was 11.6 ± 2.2. The correlation of the first year in this question was the highest obtained. This is not surprising, since vocabulary is known to correlate highly with intelligence, and might also be expected to do so with general knowledge.

Question 8.—This was a questionary involving the display of general interest in the history of medicine and in the treatment of medicine in literature. The correlations with the total scores were:

First year: $r=0.701\pm0.05$
Second „ : $r=0.596\pm0.04$
Average of first year: 38.8
„ „ second „ : 44.4

The difference between the average scores of the two years was 5.6 ± 1.83.

Question 9.—This was a questionary designed to test the general knowledge of the candidates by asking them to specify for what certain persons of the past and present are famous. The correlations with the total scores were:

First year: $r=0.638\pm0.05$
Second „ : $r=0.624\pm0.04$
Average of first year: 37.54
„ „ second „ : 41.30

The difference was 3.76 ± 1.93. Hence the difference is not certainly significant.

Question 10.—This is an elaborate test in deductive reasoning in a scientific context. The answers are given in the form of a questionary. Since it was possible to score 30% by chance, the examiners gave 0 for any candidate who did not score more than this. The correlations with the total scores were:

First year: $r=0.327\pm0.08$
Second „ : $r=0.504\pm0.05$
Average of first year: 42.20
„ „ second „ : 45.35

The difference was 2.95 ± 2.05. Hence there is here almost certainly no difference between the scores of the two years, and for this reason, as well as because of the *form* of the question, it has here been accepted as a test of intelligence in the absence of any standardized test. The difference between the *correlations* of the first and second year is 0.177 with a standard error of 0.09—hence of doubtful significance (see above).

Summary

The test consists of two parts, the first being in the form of questions to be answered by continuous passages of prose—in fact, like any other written examination. The second part is in the form of questionaries—that is, each question consists of a number of short sentences (subquestions) to which the answer can be given in one word. The purpose of this analysis is to discover whether the first part is in any way superior to the second as a selective test: if it is not, then the practical advantages of the method of the second part are so great that this form would certainly be preferred.

On the given figures, which are for most purposes very reliable, there can be no question of the first part having any advantages over the second. The conclusion, therefore, is that a test set exclusively in the form of questionaries is as reliable for selection of candidates as one set in the usual form of a written examination.

THE MEDICAL COUNCIL OF INDIA

BY

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Secretary of the Council

History

The establishment of medical colleges at Calcutta and Madras in 1835 marked the beginning in India of State-organized education in modern medical science. Ten years later the Grant Medical College was opened at Bombay, and in 1860 a medical college was started at Lahore. Although a number of medical schools sprang up to provide training for hospital assistants and sub-assistant surgeons, later known as licentiates, it was not until 1906 that the need for expansion of the teaching for the university standard was recognized. The medical college at Lucknow was established in 1911, an example followed by other centres, and in 1925 there were ten university medical colleges in India, including the Lady Hardinge Medical College, New Delhi, exclusively for women. In the early days the medical colleges granted their own diplomas, but in 1857 the medical college at Calcutta became affiliated to a university and others followed suit.

There was no central or provincial body to register the qualified medical men, to improve their status and standard of education, and to regulate the practice of scientific medicine in the country. Medical education was in the hands of the members of the Indian Medical Service who were qualified in the United Kingdom. In 1892 Part II of the British Medical Act, 1886, which conferred on the General Medical Council the duty

of ascertaining the sufficiency of the examinations leading up to the qualifying examinations, was applied to India, and before 1920 the General Medical Council had accepted for registration the degrees and diplomas of the Universities of Bombay, Calcutta, Lucknow (Allahabad), Madras, and the Panjab. Between 1912 and 1936 all the Provinces in British India, except the North-west Frontier Province and Sind, enacted their Medical Registration Acts in pursuance of which medical councils were established in each Province. These councils, however, were concerned only with the standard of medical education in their respective provinces. There was thus no central or other co-ordinating authority empowered to maintain a minimum uniform standard of medical education for the whole country. Therefore in 1921 the G.M.C. addressed a questionary to those Indian universities whose qualifications were recognized by it, and, from the replies received, that Council felt that the teaching of midwifery did not, except in Madras, reach a standard which would be recognized for a university in the United Kingdom.

In 1922, on the invitation of the Secretary of State for India, Sir Norman Walker visited India. In his report he expressed the opinion that each university could bring its regulations sufficiently in accord with the requirements of the G.M.C. to enable that Council to continue to recognize its diplomas. Consequently Colonel Needham was appointed as Inspector of Medical Teaching in the Indian Universities, and on his reports the G.M.C. continued to recognize the Indian degrees. The Calcutta University did not agree to such inspections by an outside authority, and therefore the G.M.C. withdrew recognition of the qualifications of that university from Nov. 30, 1924. This was, however, resumed on May 13, 1928. The necessity for a central co-ordinating body was more keenly felt after the war of 1914–18, as some colleges were unable to attain the uniform standard required by the G.M.C. and regular inspections by that Council were resented. Early in 1926 a non-official Bill dealing with the subject was introduced in the Council of State, but as it met with opposition in various quarters it was dropped.

Sir Norman Walker again visited India, and in 1928 the question was taken up by the Government of India, and subsequently, in July, 1929, a conference of Provincial representatives was convened. As the conference was opposed to the establishment of such a central authority, the matter was again dropped for the time being. Meanwhile, to meet the criticisms and objections of the G.M.C.—which, since 1922, had recognized the Indian degrees for limited periods only, on the basis of reports submitted by the inspectors appointed on its behalf, and which in 1927 expressed itself in favour of the establishment of an All-India Medical Council with which it could deal direct—the Government of India proposed to appoint a whole-time Commissioner of Medical Qualifications and Standards in India. In view of the opposition the proposal evoked, both inside and outside the Legislative Assembly, it had to be abandoned. The abandonment of this proposal and the non-acceptance by the G.M.C. of an alternative proposal for the appointment, as a temporary measure pending the establishment of an All-India Medical Council, of a board to supervise medical qualifications, led the G.M.C. in February, 1930, to withdraw the recognition of all the Indian medical degrees. This decision of the G.M.C. completely changed the whole atmosphere and made it imperative to establish a central council. Therefore, in June, 1930, a second conference, consisting of the representatives of Provincial Governments and of all the Indian universities, was convened by the Government of India, and it was resolved that the establishment of an All-India Medical Council was essential and acceptable to it in principle, and that a Bill should be drafted and legislation undertaken to bring the council into existence. Accordingly, a Medical Council Bill was introduced in the Legislative Assembly in September, 1932, and was referred to a Select Committee. The Bill was passed in the Autumn Session of 1933, and the Indian Medical Council Act No. XXVII of 1933 was brought into force with effect from Nov. 1, 1933. In pursuance of this Act, the Medical Council of India came into existence on Feb. 15, 1934.

So much for the history of the formation of the Council. Let us now turn towards its constitution and achievements since its inception.

Constitution and Functions

The constitution of the Council was slightly changed under the Adaptation of India Laws Order, 1937, and now it is composed of: (*a*) One member from each Governor's Province, nominated by the Central Government. (*b*) One member elected by each British Indian university having a Medical Faculty, to be elected from among the members of the Medical Faculty. (*c*) One member from each Province where a medical register is maintained, to be elected from among themselves by persons enrolled on the register who possess recognized medical qualifications or medical qualifications granted by a British Indian university. (*d*) Four members to be nominated by the Central Government.

For the first four years of the Council's constitution the president was nominated by the Governor-General-in-Council. Maj.-Gen. Sir C. A. Sprawson, C.I.E., K.H.P., I.M.S., was nominated as the first president, and he held office till Feb. 13, 1937, save for four and a half months when Maj.-Gen. Sir Frank Connor, D.S.O., K.H.S., I.M.S., was nominated in his leave vacancy. After the former's retirement Maj.-Gen. E. W. C. Bradfield, C.I.E., O.B.E., K.H.S., I.M.S., was nominated, and in February, 1938, he was elected by the Council as its first elected president. He was succeeded by Dr. B. C. Roy as the first non-official president, and in October, 1945, Dr. Abraham S. Erulkar was elected to this office.

The secretary was nominated by the Governor-General-in-Council for the first four years from the beginning of the Act. Mr. Farquhar Macrae, M.B., C.M., was the first nominated secretary, and in May, 1935, he was succeeded by Lieut.-Col. G. T. Burke, I.M.S. From Nov. 1, 1937, the Council appointed Khan Bahadur Dr. K. A. Rahman, O.B.E., as its secretary. In February, 1946, he was succeeded by Khan Bahadur Dr. A. H. Butt.

The vice-president and the members of the executive committee are elected by the Council from amongst its members. The executive committee consists of seven members, of whom five are elected by the Council, and the president and the vice-president are *ex-officio* members and are also president and vice-president respectively of the executive committee. A member of the Council holds office for a term of five years, and under the regulations framed by the Council the term of office of the vice-president and the members of the executive committee has been fixed for two years.

The medical qualifications recognized under the Act are contained in two Schedules. The First Schedule is composed of medical qualifications granted by medical institutions in British India, and the non-Indian medical qualifications are given in the Second Schedule. Inclusion in the latter Schedule is sufficient qualification for enrolment on any Provincial Medical Register. The Schedules are attached as Appendices I and II.

The functions of the Council fall under two heads: (1) The maintenance of a uniform minimum standard of higher medical qualifications for the whole of British India; and (2) The furtherance of the recognition of these qualifications in States and countries outside British India, with its corollary, the recognition in that country of approved qualifications of such States or countries.

Maintenance of Uniform Standard

Immediately after its constitution the Council drew up its Recommendations on Professional Education and on Professional Examinations. In view of the latest developments in, and suggestions for, the improvement of the medical curriculum, a revision of the former was undertaken in 1936. The modified Recommendations came into operation from 1940. With a view to uniformity in the syllabus of the pre-medical courses the Council appointed a board of experts, who formulated the minimum requirements in the basic scientific subjects. Their findings have been forwarded to the Inter-University Board for necessary action. The Council has also laid down minimum qualifications necessary for the appointment of teachers in a medical college.

The first round of inspections of courses of instruction and final examinations of all the British Indian universities was carried out between 1934 and 1938. As a result of this much improvement was effected, and the qualifications of all the universities are now included in the First Schedule. On the recommendation of the Council the M.C.P.S. qualification granted by the College of Physicians and Surgeons, Bombay, has also been placed on the Schedule and is recognized when granted after April 30, 1944. The Council has been engaging itself in inspecting the courses of instruction, and the

facilities for teaching and examinations in the pre-clinical and clinical subjects.

In consequence of the Council's recommendation to the Central Government to ask the Provincial Governments either to abolish the medical schools or to raise them to university standard, the Agra Medical School, Stanley Medical School, Madras, and Amritsar Medical School have been raised to college standard. Steps in this connexion are being taken in other Provinces, and new colleges are also being established under the post-war reconstruction schemes. By an amending Act, 1942, powers have been vested in the Council to appoint visitors in addition to inspectors.

The Women's Christian Medical College, Ludhiana, and the Glancy Medical College, Amritsar, were visited on behalf of the Council. The Agra Medical College has been inspected, but before deciding the question of the recognition of the M.B., B.S. degree granted by the Agra University, the Council has appointed visitors in order to find out how far the necessary improvements suggested by the inspectors have been carried out.

The Council accorded temporary recognition to certain qualifications—viz., D.M.S. Madras, L.M.S. Panjab State Medical Faculty, M.S.M.F. Panjab and U.P., M.M.F. Bengal—for purposes of recruitment to the Emergency Cadre of the I.M.S. After a visitation, the M.B., B.S. degree granted by the Osmania and Mysore Universities was also given similar temporary recognition as a war measure. As regards permanent recognition, the Osmania Medical College was inspected on behalf of the Council, and the reports are under consideration. The Mysore University is not yet ready for inspection. Emergency commissions for holders of foreign qualifications not recognized by the Council were disposed of on individual merits by the president.

The executive committee of the Council did not approve of the Government's suggestion that during the war the period of training of medical students should be cut short or the standard of examinations lowered. It was, however, decided that if a member of the staff of a medical college joined the Army, his work might be carried out by the senior students, provided suitable arrangements were made to continue their studies.

In 1937 the Council made recommendations regarding admissions of licentiates to the M.B., B.S. degree. In 1943 certain concessions were allowed, operative during the war and for three years thereafter. These were followed by further concessions, and the periods of training of the different categories of licentiates for the degree have been clarified. The Council has been moving the universities in this connexion, and as an interim measure it requested the Central and Provincial Governments to take steps to provide suitable teaching facilities to the licentiates to obtain the M.B., B.S. degree, by utilizing so far as possible the medical schools and colleges already in existence, and by establishing new institutions wherever possible and necessary.

The Council's proposal for an All-India Medical Register is receiving the consideration of the Central Government. It is intended to include licentiates as well as Indian National holders of foreign qualifications not recognized by the Council but borne on the Provincial registers up to a fixed date. In 1937 the Council made a survey of the teaching in the subject of midwifery, and the information so collected was compiled in a pamphlet. A further survey was made in 1942. The Council has drawn the attention of the universities to the desirability of paying special attention to the teaching of orthopaedics because of its growing importance due to the war. It also suggested that special instruction in the diagnosis and treatment of leprosy on modern lines be provided for students of medical colleges.

Recognition of Qualifications

With a view to making provision relating to medical diplomas granted in the United Kingdom or Burma, which is referred to in subsection (1) of section 120 of the Government of India Act, 1935, the Medical Diplomas Act, 1939, has been enacted by the Indian Legislature.

As a result of negotiations the G.M.C. has accepted for recognition the medical qualifications granted by the British Indian universities included in the First Schedule, except Andhra University. This matter is under the consideration of the G.M.C. It has also been informed of the recognition by the Medical Council of India of the qualification of M.C.P.S. Bombay. In view of the defects pointed out by the inspectors of the G.M.C. regarding the qualifications granted by some of the Licensing Bodies in the United Kingdom, the Medical Council of India has recommended discontinuance of the recognition of such qualifications ; the matter is receiving the attention of the Central Government.

After negotiating with countries and States outside British India, the Council entered into schemes of reciprocity, in some cases direct and in others through the G.M.C., and in 1937 the Second Schedule was revised accordingly. In 1940 the Council did not favour indirect reciprocity, and on its recommendation the Schedule was further amended whereby reciprocity now exists only with Malta, New Zealand, and Burma. The question of mutual recognition of medical degrees between this Council and the South African Medical Council is under consideration by that Council. Medical qualifications granted in Italy and Japan are now recognized only when granted on or before Oct. 10, 1940, and Dec. 8, 1941, respectively.

The Council has asked the Central Government to set up a General Reciprocity Board to facilitate reciprocity between India and the countries comprising the British Commonwealth of Nations, and also to remove, by mutual discussion, any difficulty in the way of establishing reciprocity with these countries, and to maintain it when once established. The matter is being examined by the Central Government and the India Office.

It may be borne in mind that the Medical Council of India has to function both internally and externally within the four corners of the Act under which it has been constituted. It is neither an administrative nor a legislative body. It cannot amend, alter, or change the Act. Even for its finances it has to depend solely on the Central Government. Within its limitations the Council has been doing its best towards the attainment of efficiency at home and honour abroad.

APPENDIX I

FIRST SCHEDULE.—*Recognized Medical Qualifications Granted by Medical Institutions in British India and approved by the Medical Council of India*

Medical Institution	Recognized Medical Qualification	Abbreviation for Registration
University of Allahabad	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. All.
University of Bombay	Licentiate in Medicine and Surgery	L.M.S. Bom.
	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Bom.
	Doctor of Medicine	M.D. Bom.
	Master of Surgery	M.S. Bom.
University of Calcutta	Licentiate in Medicine and Surgery	L.M.S. Cal.
	Bachelor of Medicine ..	M.B. Cal.
	Doctor of Medicine	M.D. Cal.
	Master of Surgery	M.S. Cal.
	Master of Obstetrics	M.O. Cal.
University of Lucknow	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Lucknow
	Doctor of Medicine	M.D. Lucknow
	Master of Surgery	M.S. Lucknow
University of Madras ..	Licentiate in Medicine and Surgery	L.M.S. Mad.
	Bachelor of Medicine and Master of Surgery	M.B., C.M. Mad.
	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Mad.
	Doctor of Medicine	M.D. Mad.
	Master of Surgery	M.S. Mad.
Panjab University ..	Licentiate in Medicine and Surgery	L.M.S. Pan.
	Bachelor of Medicine ..	M.B. Pan.
	Doctor of Medicine	M.D. Pan.
	Master of Surgery	M.S. Pan.
	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Pan.
Patna University ..	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Patna
	Doctor of Medicine	M.D. Patna
	Master of Surgery	M.S. Patna
Andhra University ..	Bachelor of Medicine and Bachelor of Surgery	M.B., B.S. Andhra
	Doctor of Medicine	M.D. Andhra
	Master of Surgery	M.S. Andhra
	Licentiate in Medicine and Surgery	L.M.S. Andhra
College of Physicians and Surgeons, Bombay	Membership	M.C.P.S. Bom.*

* A recognized medical qualification only when granted after April 30, 1944.

APPENDIX II

SECOND SCHEDULE.—*Recognized Medical Qualifications Granted by Medical Institutions outside British India*

Country	Qualifications		
		Registrable Qualifications	
Other Countries	Title	Nature of Qualifications as Stated on Diplomas	Abbreviations
UNITED KINGDOM	Registrable qualifications admitting primarily to the *Medical Register* granted by licensing bodies in the United Kingdom, as shown in Table F set out in the *Medical Register*.		
AUSTRALIA			
New South Wales			
University of Sydney‖	M.B., M.D., Ch.M., B.S.	Medicine and Surgery	U. Sydney
South Australia			
University of Adelaide*‖	M.B., B.S., M.D., M.S.	,,	U. Adelaide
Victoria			
University of Melbourne†	M.B., M.D., B.S., M.S.	,,	U. Melbourne
BURMA			
University of Rangoon	M.B., B.S.	,,	U. Rangoon
CANADA			
Alberta			
College of Physicians and Surgeons of the Province of Alberta†	Member	,,	C.P. and S. Alta.
University of Alberta†	M.D.	,,	U. Alberta
Manitoba			
College of Physicians and Surgeons of the Province of Manitoba†	Member	,,	C.P. & S. Man.
University of Manitoba†	M.D., M.D., C.M.	,,	U. Man.
North-West Territories			
College of Physicians and Surgeons of the Province of North-West Territories† (When held in conjunction with Licence of the College of Physicians and Surgeons of the Province of Saskatchewan or the Province of Alberta)	Member	,,	C.P. & S.N.W. Terr.
Nova Scotia			
Nova Scotia Provincial Medical Board*‖	L.M.S.	,,	N. Scotia P.M. Bd.
Dalhousie University*‖	M.D., C.M.	,,	Dalhousie U.
Prince Edward Island			
Prince Edward Island Medical Council†	L.M.S.	,,	M. Co. P.E.I.
CEYLON			
Ceylon Medical College*‖	L.M.S.	,,	Ceylon M. Coll.
HONG KONG			
University of Hong Kong*‖	M.B., B.S., M.D., M.S.	,,	U. Hong Kong
ITALY			
All Royal Italian Universities‡ §	M.D.	,,	
JAPAN			
All Imperial Universities‡ ¶	M.B. (Igakushi), M.D. (Igaku Hakushi)	,,	
Any Government or Prefectural special colleges designated by a Minister of Education of Japan‡ ¶	M.B. (Igakushi)	,,	
MALTA			
Royal University of Malta	M.D.	,,	U. Malta
NEWFOUNDLAND			
Newfoundland Medical Board†	L.M.S.	,,	Nfld. M. Bd.
NEW ZEALAND			
University of New Zealand	M.B., Ch.B., Ch.M., M.D.	,,	U.N. Zealand
UNION OF SOUTH AFRICA			
University of South Africa†	M.B., Ch.B.	,,	U.S. Africa
University of Cape Town*‖	M.B., Ch.B., M.D., Ch.M.	,,	U. Cape Town
University of the Witwatersrand, Johannesburg*‖	M.B., Ch.B., M.D., Ch.M.	,,	U. Witwatersrand
STRAITS SETTLEMENTS AND FEDERATED MALAY STATES			
King Edward VII College of Medicine, Singapore*‖	L.M.S.	,,	Singapore Med. Coll.

* The qualification must be included in Table I of the *British Medical Register*.
† When granted on or before Oct. 31, 1937.
‡ The qualification must be included in Table J of the *British Medical Register*.
‖ When granted on or before March 31, 1942.
§ When granted on or before Oct. 10, 1940.
¶ When granted on or before Dec. 8, 1941.

Medical Memoranda

Post-operative Occurrence of Exophthalmic Goitre

As I have been unable to trace any similar recorded case I feel the following may be of interest.

CASE HISTORY

A Chinese merchant seaman aged 40 was admitted to the Chinese Seamen's Home at Birkenhead complaining of a swelling in the right groin, with occasional attacks of pain. He stated that the swelling had always been there but had been lately increasing in size. The pain had been present for only a month or two.

Examination showed him to be a healthy male. The heart, lungs, and central nervous system appeared to be normal. The pulse was slow, about 64. The right side of the scrotum was empty, and there was a right inguinal hernia. The undescended testicle was indefinitely palpable. The patient was aware of the condition and was anxious to have the testicle placed in the scrotum. When it was explained to him that there was little likelihood of accomplishing this successfully, and even less likelihood of the testicle functioning, he was very distressed, as he was most anxious to return to China and raise a family. By the aid of interpreters it was eventually made clear to him that his remaining sound testicle was quite sufficient. He was greatly relieved at this and cheerfully consented to have his hernia operated upon and, if necessary, his undescended testicle removed.

At operation, under chloroform and ether, it was found that the testicle was only about the size of a thumb-nail and obviously useless. It was therefore removed, and the hernia dealt with in the usual manner. The inguinal canal was completely occluded. The general condition during the operation was excellent, and the immediate post-operative period passed without incident.

Fourteen days after operation the patient complained of a swelling in the right side of the neck. During the next six days this increased to about the size of a pigeon's egg. At the end of this time a smaller swelling occurred on the left side. On examination it was evident that the swellings were due to enlargement of both lobes of the thyroid gland. Two or three days after the first swelling started it was noticed that the patient's eyes were beginning to "stare." This went on to quite evident exophthalmos. The pulse rate crept up in ten days from his normal of 64 to the region of 85–90. No tremors were present. An obvious diagnosis of exophthalmic goitre was made. No family history of a similar complaint was elicited.

COMMENT

It must be a comparatively rare event for a patient to develop exophthalmic goitre while actually in hospital. The possibility that it was just coincidence is extremely unlikely. It seems improbable that there was any connexion between the fact that an endocrine gland was removed at operation and that a disease involving another gland followed, especially as the testicle was atrophied. The most obvious explanation of the onset is the emotional factors surrounding the operation. One would, however, expect more such cases to occur. The rapid onset of symptoms in the above case brings the apparent cause prominently to the foreground.

I am indebted to Dr. Wilson, the Medical Superintendent, for permission to publish this case.

WILLIAM MCKENZIE KELSO, M.B., Ch.B.,
Surgical Officer, Chinese Seamen's Home, Birkenhead.

Reviews

PRACTICAL ANATOMY

Practical Anatomy. By W. E. Le Gros Clark, D.Sc., F.R.S., F.R.C.S. Professor of Anatomy in the University of Oxford. (Pp. 470; 251 illustrations. 25s. net.) London: Edward Arnold and Co.

A knowledge of the main facts of topographical anatomy is essential for the medical student. Many teachers of anatomy now believe that the student should not be asked to memorize details of topographical anatomy which may be of little value to him in his subsequent clinical studies. While there is general agreement with regard to the main facts which must be taught, there is less unanimity as to what minutiae should be included. By the drastic elimination of superfluous details Prof. Le Gros Clark has succeeded in producing a dissecting manual in one volume. This book is designed to include all aspects of "dissecting-room anatomy" which will be required by medical students for the 2nd M.B. examination or its equivalent and for their subsequent clinical work. The author makes it clear that the book does not treat of the details of topography which are of importance to the specialist for operative technique. He, like many anatomists, believes that these details should be acquired after qualification. It is only by the elimination of many of the topographical minutiae that time can be found, in a curriculum which is overcrowded, for the teaching of other aspects of anatomy—surface and radiological anatomy, embryology, and post-natal growth—which are of more importance to the student than small points of topographical anatomy.

The book is divided into the following sections: the upper extremity, the lower extremity, the head and neck, the brain, the thorax, and the abdomen. In each section instructions are given concisely and clearly for the exposure and recognition of the main structures, and in addition the dissector is referred to preliminary and supplementary studies before and after the dissection of each region. It is unfortunate that the illustrations do not attain the standard of the text; some of them are too small and diagrammatic to be of much value to the student. In addition the absence of colour in vessels and nerves in some instances makes the illustrations look unduly complicated.

This book will be welcomed by teachers and students alike and will undoubtedly have the success which it deserves in this and subsequent editions.

TEACHING BIOCHEMISTRY

An Introduction to Biochemistry. By William Robert Fearon, Sc.D., M.B. Third edition, revised throughout and enlarged. (Pp. 569. 21s.) London: William Heinemann Medical Books. 1946.

A Textbook of Biochemistry. By Philip H. Mitchell, Ph.D. (Pp. 640; illustrated. 25s.) New York and London: McGraw-Hill Book Company. 1946.

Human Biochemistry. By Israel S. Kleiner, Ph.D. (Pp. 573; 70 text illustrations and 5 colour plates. 30s.) London: Henry Kimpton. 1945.

Of these three textbooks on biochemistry one is now an old friend. It is always a pleasure to handle a new edition of Fearon; first, because this is an indication that the previous edition has probably sold out, which it certainly deserved to do; secondly, because one is confident that the author will have carried out the revision in such a way as to give the student every opportunity of following the advancing fringes of the subject. So, in this welcome third edition, Prof. Fearon now gives full recognition to the importance of Frazer's views on fat absorption; he discusses the uses of tracer isotopes in biochemical research; he uses the logical Levene system for describing the optical rotation and configuration of substances, such as amino-acids, ultimately derivable from tartaric acid, and describes this clearly. On the other hand there seems to be no reference to the fundamentally important work of Tatum and other American geneticists, which lies on a new "borderland of science" and may help to revolutionize our whole method of attacking problems of intermediate metabolism. Some reference might also have been made to the now widely used microbiological methods of assaying amino-acids. The reviewer has noted few statements in this book to which he could take exception on grounds of inaccuracy. But surely the co-enzyme of tyrosine decarboxylase is pyridox*al*, not pyridox*yl*, phosphate, and must be described in connexion with the facts now known about the "vitamin B_6 group"? Further, he wonders whether Prof. Fearon could give any literature reference for his explicit statement about the active carotinoids that "transformation of the pro-vitamins into the vitamin takes place in the liver." Possibly, even probably, it does, but where is the experimental evidence to support the possibility? The tendency to over-simplification, of which this is an example, is almost unavoidable in a textbook, unless one is prepared to risk "scattering and confusing" the student. Another instance is to be found in the definition of a vitamin; for man, two of the most important fat-soluble vitamins are not "micro-constituents of the diet," for vitamin D can be made from the pro-vitamin in the skin, the pro-vitamin being almost certainly of endogenous origin (otherwise how do fruitarians get their cholesterol steroids?) and vitamin A is completely "dispensable" from the diet, provided this contains enough of certain carotinoid pigments.

These observations—comments rather than criticisms—serve but to emphasize the outstanding characteristic of Prof. Fearon's admirable book, now a stand-by on the shelves of most British and Irish biochemists. It compels contemplation, comment, even argument. Written with the utmost clarity, simplified to the ultimate possible point and very rarely beyond it, illuminated with flashes of Hibernian wit and with philosophical reflections, implicit as well as explicit, that reveal the traces of that great school of biochemistry from which the author admittedly draws much of his inspiration, showing a willingness not only to consider criticism calmly, but to make use of it in later editions—such are a few of the qualities of what still remains, in spite of competition from overseas, the best general textbook of biochemistry in the English language.

Two of the competitors are also under review. It seems as though no department of an American university were complete without its own professors, associate professors, and other staff members and its own textbook. Otherwise it is difficult to explain the steady stream of new "introductions" to biochemistry that cross the Atlantic. One is by Prof. Philip Mitchell of Brown University and the other by Prof. Israel Kleiner of New York Medical College. Like Prof. Fearon, they have both written with the student first and foremost in mind, but Mitchell's book covers a somewhat wider field at a slightly higher pedagogic level. On the other hand it is devoid of the descriptions of numerous simple practical tests that are a feature of Fearon's book and show that author's contempt for the arbitrary lines drawn by some between work done sitting on benches or standing at the bench. Mitchell's book, on the other hand, wanders far enough from the field generally held to be legitimately the biochemist's as to include a (final) chapter on chemotherapy, which can hardly yet be held to have been systematized into the biochemist's province. This textbook is 12.5% longer than Fearon's (in pages) but nearly twice as heavy in the hand; of such is American book paper.

Kleiner's book is also a useful addition to the large and still growing number of these textbooks. His curious title indicates, according to the author's own explanation, an attempt to link up the medical student's incursions into biochemistry with those problems of human health that will—or should—be his concern. This attitude towards the teaching of students begs certain fundamental pedagogic issues that have frequently been the subject of intense discussion in the columns of this *Journal*. It is not intended here to be drawn into any controversy on the subject. Suffice it to say that Prof. Kleiner's own explanation of his title suggests that it might perhaps more illuminatingly have been called "Humane Biochemistry," to indicate the author's kindly attitude to his student readers. It is perhaps significant that Mitchell's book also includes a preface explaining his attitude towards the writing of textbooks. Fearon, on the other hand, has not reproduced in the present edition his prefaces to the first or second; he gives the baldest of introductory comments and then plunges *in medias res*. There remains to record one curious fact which applies to all three of these books. In each of them there is a specific direction to Rosenberg's *Chemistry and Physiology of the Vitamins* (1942) as a standard work of reference, which it certainly still is. In none of them is there any mention of Prescott and Bicknell's *The Vitamins in Medicine*, which is (in its 1946 edition) naturally more up to date than Rosenberg's book.

A. L. B.

REVIEW OF PHYSIOLOGY

Annual Review of Physiology. Volume VIII. Editor, James Murray Luck; Associate Editor, Victor E. Hall. (Pp. 658. $5.00 or 30s.) California: Annual Reviews Inc., Stanford University P.O. London: H. K. Lewis and Co. 1946.

This kaleidoscopic presentation of physiological activities appears in its usual form though there are 116 fewer pages than in Volume VII and one review less. In spite of this contraction no one who usually welcomes this work as a means of keeping aware of current advances on many physiological points will be disappointed in the current volume. Since the majority of the reviews cover a one- or two-year period to about the middle of 1945, the contributors have had to deal with a diminishing number of papers, and these published mainly in American journals. Consequently, as a glance at the bibliography attached to any of the reviews will show, the accounts are chiefly of advances in American physiology. It is impossible for a reviewer to read and evaluate critically in the time at his disposal the whole of the 658 pages of concentrated material making up the volume, and only a general impression can be given. The year-by-year reviews on such subjects as "Heart," "Respiration," "Digestive System" each has its particular high lights; thus in the review on the heart there is a timely appreciation of the newer methods of measuring cardiac output. The functions of the cerebral cortex are usefully surveyed in the review on "Somatic Functions of the Central Nervous System," while fresh consideration is given to the so-called antagonism of the sympathetic and parasympathetic divisions of the autonomic system in the allied review "Visceral Functions of the Nervous System." "Applied Physiology" gives an outline of the methods, with their limitations, for assessing physical fitness. It also considers some of the wartime research, now available for publication, on the factors concerned in the acclimatization of the body to extremes of temperature. The same subject is also dealt with to some extent in the review on "Skin," which, however, surveys more fully nutritional factors.

Naturally the reviews are unequal in their standard because this depends on both the author and the material, but it is evident that the editors have persevered with their policy and have endeavoured to choose contributors who would "evaluate with discrimination the present status of the subject" instead of undertaking mere compilation. This seems to be an important attitude to maintain if there is to be any effective synthesis of the great mass of published work in physiology, and in other subjects, and one which might be insisted upon more strongly by the editors of other publications which devote themselves to reviews.

A STUDY OF NORMAL UNDERGRADUATES

What People Are. A Study of Normal Young Men. By Clark W. Heath. (Pp. 141; illustrated. $2.00 or 11s. 6d.) Massachusetts: Harvard University Press; London: Oxford University Press. 1945.

The old maxim that prevention is better than cure is becoming much more seriously considered in medicine to-day than it ever has been before. But if we as doctors are to keep people normal and healthy we must be much more certain what we mean by normality. Our early physiological training in normal functioning has been too much overlaid by pathology and interest in disease, so that we are apt to think of the normal person as one who does not suffer from illness rather than as one who has certain positive qualities. It was with the purpose of establishing this positive view of normality that the Grant Trust was formed. The present volume describes the findings of investigators under this Trust in a group of apparently normal, healthy, well-adjusted Harvard students. The approach was a wide one: physiological, psychological, anthropological, medical, and social.

It is interesting to note that, in spite of the apparent normality of these young men, 91% had problems which they wished to discuss and in 22% the problems were serious, but the investigators deprecate the assignment of normal people into pathological types such as cyclic, schizoid, paranoid, etc., as they do not think these are valid for the normal. The members of the group were classified according to their general soundness as A, B, or C, and in accordance with their basic characteristics. Some correlation was found between these two classifications, but not always that which was expected. The influence of home background (economic and social factors, broken homes, etc.) was not nearly so potent in the normal as it was in the abnormal, and the sounder the personality the less did he suffer from conflict. The attitude of this group to such things as delay in physical maturation, divergent interests and capacities, and to frustrations is of great interest. There was a marked variation in morphological characteristics and in physiological reactions, and for this no valid explanation—racial, economic, or other factor—has so far been found.

On medical examination very few of these undergraduates were found to be 100% free from minor blemishes, and a high proportion had been subjected to operative intervention such as tonsillectomy or appendicectomy. It would appear, therefore, that we must not think in terms of an individual example of normality, but rather of a "band" coming within which an individual may be rated as normal, just as in intelligence testing relatively few are found to have an I.Q. of exactly 100% but the vast majority have I.Q.s ranging from 85 to 115%, all of whom can be regarded as normal. Five case histories are interesting, especially in respect of the discussion as to their suitability for university education.

Altogether this is a highly stimulating study, and it is to be hoped that much more work will be done along these lines. Normality is a subject which should be much better understood by members of the medical profession, whether practising in general or in special departments.

Notes on Books

Dr. CHARLES NEWMAN'S *Medical Emergencies* has reached the third edition (J. and A. Churchill; 10s. 6d.). He has been able to condense this admirable book in several ways, particularly by the removal of the section on war gases, as it is to be hoped this will no longer be needed; in any case it would be out of date. On the other hand, the sections dealing with the sulphonamides and penicillin have been added to extensively. The author points out that though there are, of course, many more surgical than medical emergencies, treatment in the latter must frequently be instituted within minutes or even seconds to be of any avail. He defines a medical emergency as being a condition in which accurate diagnosis and prompt treatment are necessary to save either life or great suffering. The various chapters are well compiled, giving the requisite information in a most concise and practical manner. To that end he admits to being dogmatic; at such times it is useless to distract the practitioner's mind between alternative methods. Therefore, in general, he gives only the method which has served him best. A refreshingly practical book.

Introduced with references to *Religio Medici*, and to Oliver Wendell Holmes, *The Physiology of the Newborn Infant*, by Prof. CLEMENT A. SMITH, comes at a time when there has been a great renewal of interest in the care of the baby, especially at this age period. The difficulties in the study of the newly-born are great, which partly explains the comparative neglect of the subject now discussed. But already in this country the work of Barcroft, McCance, and others has indicated what can be done to study the physiology of the foetus and infant. Prof. Smith has gathered together a large amount of work into a series of chapters which are in effect monographs on, for example, respiration, jaundice, the blood, metabolism, and so forth. The nervous system has not been considered, largely because there does not exist any physiological study of this system comparable with what has been attempted in others. Each chapter is carefully documented and a good bibliography for each monograph makes this an excellent work of reference. Not only does the text give a valuable summary of the published work, but anyone specially interested can easily start on a study of original documents. Obstetricians and paediatricians will find this new book a valuable addition to their libraries. It is published in the U.S.A. by Charles C. Thomas of Springfield, Illinois, at $5.50 post paid.

C. D. DARLINGTON and E. K. JANAKI AMMAL'S *Chromosome Atlas of Cultivated Plants* (George Allen and Unwin; 12s. 6d.) is an impressive book, for information is provided regarding no fewer than 10,000 species. The word "atlas," incidentally, is applied in its less usual meaning of a conspectus of a subject, and there are no illustrations. It will be of great value to the geneticist, the systematic botanist, and especially to the practical improver of cultivated plants. A brief but admirable introduction shows that the newly acquired knowledge of recent years does indeed provide a bird's-eye view of the whole process of the evolution of genetic systems in flowering plants, and as the authors say: " . . . already in some sense it shows the plan and proportions of Nature."

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SELECTION OF MEDICAL STUDENTS

The interest devoted in the last few years to improving the work of the medical profession has inevitably led to the serious consideration of two questions. What kind of training will equip the future doctor for making the most useful contribution to the health of the community, and how should the best students be obtained? The "Report of the Inter-Departmental Committee on Medical Schools" (the Goodenough Committee) answered these questions with proposals based on comprehensive considerations. On the subject of selection the Committee stressed the need for the authorities and officers of the medical schools to give this subject serious attention. Certain principles in the selection of medical students that are generally agreed were listed, and the suggestion was made that medical schools should carefully consider the extent to which special aptitude tests could be usefully applied. Attention was drawn, in this connexion, to the experience of the Services in selecting officers.

That methods of selecting students might be made more scientific has not been ignored. Experiments have been carried out in recent years at various medical schools in the use of certain aptitude tests, chiefly tests of intelligence; but the limited correlation between performance in these tests and examination success has tended to be discouraging. It has also been unfortunate in maintaining the belief that the technician in the field of assessing human assets and liabilities has little to offer of practical value because these tests are the chief "objective" measures he has to hand. Actually, a high correlation between intelligence test scores and examination success would not be expected by the technician, for success is a product of capacity and effort. That is not to say, however, that the estimation of intellectual capacity is unimportant; it merely means that other highly complex factors have to be taken into account. Making an assessment of the potential development of the human being is notoriously difficult. In the physical field there is no one "objective" test for the physical health of the individual. Nevertheless, the physician uses many tests of isolated physical functions in collecting the evidence upon which he bases a judgment. In the psychological field, however, expectations are still widely prevalent that some magical test should be produced that will give "the answer."

The article by Dr. Smyth in this number of the *Journal* is of great value in clarifying many of the issues involved in this complex task of choosing the student. He rightly points out the current confusion associated with the term "aptitude test" in relation to suitability for a career in medicine. "In fact there are few useful abilities which cannot be turned to advantage in some or other branch of medicine." What then is to be sought? If desirable qualities are listed the array begins to create the picture of a somewhat superhuman individual. Smyth wisely notes that the field of medical work is so diverse that few would care to suggest "which of all of these qualities or which combination of them is most valuable." He then proposes a simplification into three groups in each of which it might be more realistic to attempt an assessment. These are (1) intellectual capacity, (2) character, and (3) interest. Of the last of these he concludes that attempts to judge this are "not likely to be reliable or profitable," because interest can be so much a product of subsequent experience in an occupation. Intellectual capacity, on the other hand, lends itself to relatively objective approaches. The common criteria at present for intellectual capacity are the various certificates or entrance examinations for which the prospective student sits while still at school, and, as Smyth indicates, there are many limitations to the value of these. He describes some experiments with women students made at University College, on the basis of which he found that a short-answer type of question in the fields of elementary science, use of English, capacity to draw inferences from the written word, and general knowledge gave results of great value. Wilkie in his paper (page 367) showed by careful statistical analysis that the assessments made from these short-answer questions were as good as those made from the traditional essay type of question for the purpose of selection. It is therefore possible to get assessments of intellectual capacity by methods much more economical in time and with more consistent standards.

In regard to the judgment of character Smyth assumes the interview to be the most appropriate method of collecting data, and he does not make any suggestions beyond indicating how judges might grade their likes and dislikes. However, he does suggest that judges be assessed in the light of follow-up findings and that those who proved good should be retained, while those who made many mistakes should cease to serve on a selection committee.

The value of Smyth's contribution does not, however, lie principally in his experiments. Indeed, of these he admits that his efforts could be regarded as naïve in view of the vast amount of work by psychologists that has already answered many questions about the technique of examinations. Its value lies rather in the way in which he has considered wider issues than questions of testing procedures. He examines the sources of supply of students and accepts the evidence to show that the resources of the community are not being fully tapped in this respect, largely because of financial barriers. He also points out that the nature of the procedure used will be governed by the applicant/place ratio. In this connexion his survey would indicate that the supply is likely to be much greater than the demand—or rather the capacity to absorb students—for several years to come and that this will be best dealt with by screening procedures. It is here that the psychologist's tests will be likely to be of great value, for they can be used to provide common standards for rejecting all those below a certain standard of ability which is considered desirable if adequate professional competence is to be achieved. Further investigations of the more complex variables such as character and interest can then be devoted to those who pass this first hurdle.

It is gratifying indeed to find that so much careful thought is being given to this serious task. From the standpoint of a modest layman in the field a contribution of importance has been made. What can the expert add? As Smyth remarks, "there is even sometimes a feeling of alarm at the idea that psychologists should take part in selecting medical students." It is probably in this very

issue that the value of the Service experience is most helpful, and it is unfortunate that this experience has not yet been made available. The question put by Smyth, "Should the amateur select when the expert is available?" is not perhaps the right question to ask. Sufficient is known, for example, of the work of the War Office Selection Boards for some of the fundamental questions to be answered in the light of their experience.

The nature of these Boards, the pattern of which was evolved by the technical advisers in the Army, is clearly important, for their wide adoption by the British Army, by several of the Allied Armies, and by the Civil Service for its higher-grade appointments proves that fundamental dilemmas of this kind have been resolved. In these Boards it is a basic principle that the responsibility for the decisions about candidates rests with the President of the Board. He is assisted by regimental officers and by a technical department which includes a psychiatrist and a psychologist. The role of the specialists is two-fold. First, they provide a joint opinion to the President, as do other members, about the candidate. This is based on the results of written tests, observation in various practical situations, and on interview. Secondly, they develop testing techniques for the layman, so that he can make observations and gather evidence in a way that is appropriate to his background of experience in the Service and from which his intuitive judgments derive. Although interesting developments took place in the matter of test methods for assessing "character" and "interest" (particularly with candidates applying for university courses prior to being commissioned in technical arms), the Army experience is just as valuable in the broader questions of planning.

If the selection of medical students is to be advanced in the near future a planned attack must be made on the problem. The overcoming of financial barriers to widen the supply of candidates will mean that entrance to the various schools must be co-ordinated. Common standards must be attempted, otherwise there will be injustice; and the good will and co-operation of the candidates must be secured. This is not to destroy the individuality of the Medical Schools. Each of these will require its own Selection Board, and if the Service experience means anything the Board should comprise a President (the Dean or a Senior member of the Faculty), assisted by other members of the teaching staff and by psychological advisers who include psychiatrists and psychologists. The psychologist has advanced our knowledge of testing abilities, but the major developments in methods for investigating personality have come from medical psychologists. The trend of research in America and other countries in recent years has emphasized the need for medical and non-medical psychologists to work together in teams if their contributions to such practical social problems as selection are to be made as effective as the total range of methods available to the human sciences makes possible.

The task is a complex and urgent one, yet the scientific method is just as applicable as in the somatic field. There is a research problem here of urgent importance. It will include the adequate investigation of methods of getting the best applicants, making a job-analysis from which grounds of selection can be evolved, and working out a procedure which will be satisfactory to the selectors, scientifically adequate to the expert, and manifestly just and helpful to the candidate.

Job-analysis, as the word implies, is an analysis of the work the doctor has to do. In medicine there is perhaps a wider variety of jobs than in any other professional calling. A "doctor" may be an administrator in central or local government, a ship surgeon, a panel practitioner in an industrial city, a medical superintendent, a research worker in physiology or clinical medicine, or a member of the honorary staff of a voluntary hospital. But in all these jobs there are common factors, such as a basic medical training, which provides a minimum of technical competence and draws out a supposed concern for the welfare of fellow human beings. Any method of selection must be based on a full analysis of these common factors. A student selected on this basis, and accepted, has such a wide field of opportunity open to him in medicine that it should not be difficult for him to find a niche that suits him. Analysis of the various jobs available should make the continued process of selection possible. Up to the present the medical student has had to make do with the somewhat haphazard method of self-selection. The role of a selection procedure in relation to training will have to be worked out in practice. To think that selection by itself should produce good doctors is like thinking that the health of the members of an institution would be secured solely by conducting a physical examination on entrance. If the selection procedure is thought of as an initial appraisal its findings can be used throughout training so that the best can be got out of all students. In other words, the more the selection findings can be used for guiding the student and helping him, the easier will it be to achieve both good selection and good training—and enable the qualified doctor to find the job to which he is best fitted.

AN INTERNATIONAL POSTGRADUATE CENTRE

London, with Edinburgh and other academic centres in Great Britain, may yet become the home of a great international postgraduate organization attracting graduates from universities all over the world, and especially from the British Dominions and Colonies. Elsewhere in this issue Sir Francis Fraser, to whom the shaping of the British Postgraduate Medical Federation is mainly due, discusses this possibility. As a pendant to this not immediately realizable prospect is the programme announced by the Nuffield Foundation of fellowships designed to enable medically qualified persons from the British Dominions and India to obtain in the United Kingdom such postgraduate training and experience as may be necessary to prepare them for teaching and research in their own countries. Meanwhile the postgraduate services which London and other centres are building up will be available to those general practitioners who wish to refresh their knowledge, to keep themselves up to date, or perhaps to adopt some form of specialism.

Postgraduate education has laboured hitherto under the disadvantage of being detached from the main stream of medical training. Ideally the education of the medical practitioner should be continuous from the premedical preparation, through the medical curriculum and hospital appointments, to general or special practice accompanied by periodical and seriously pursued postgraduate study. As things are, the postgraduate course fails to sustain the

undergraduate discipline. Undergraduate study has all the advantages of directness, continuity, compulsion, and specific purpose. It leads to examination, qualification, and the practice of a profession. Postgraduate study, on the other hand, is apt to be diffuse, spasmodic, often casually undertaken, uneven in method and uncertain in approach, and, of course, it is optional to the student. The instruction may be systematic and well thought out, or it may be loose and include no definite curriculum or periods of study. It may be inspirational and cultural, in line with the tradition of a university, or it may consist largely of the demonstration of technical procedures. It may mean a vacation course at a clinic, an intensive week-end or two, regular instruction at a selected hospital in general medicine or some approved special subject, or attendance at lectures and discussions arranged by a local medical society. Not that these last are to be disparaged. Osler said that a well-conducted medical society should be a clearing-house in which a doctor could obtain his intellectual rating and estimate his assets and liabilities.

It is because of this lack of uniformity and of authoritative direction that postgraduate education has tended to be unequal in its value and in the quality of its results. This was true in some measure of the Continental schools which during the century between the end of the Napoleonic Wars and 1914 offered postgraduate opportunities to British doctors. Paris was the first of these Meccas, and its principal attractions were the admirable clinical teaching, with at the time no parallel in this country, and the opportunity for studying morbid anatomy. Later in the nineteenth century the wards of the Paris hospitals gave place to the great amphitheatres of Berlin, Munich, and Leipzig, and presently there arose the school of Vienna, which in some respects surpassed all others. Serious study in the famous clinics and laboratories of the Continent was undoubtedly a fruitful and memorable experience in the career of many British doctors. But the quality of the instruction was not always what was claimed for it. It suffered from its very popularity. In a survey of medical education in Europe, undertaken in 1912 for the Carnegie Foundation, Abraham Flexner, brother of the famous pathologist, was very critical of these Continental postgraduate schools. This was at a time when at a number of Continental universities short courses of every description could be arranged. Such courses were indeed the main support of many docents and assistants and constituted the "foreign study" of most of the graduates from Great Britain and other countries. In Vienna the courses ran customarily for five weeks and were held at one or other of the twenty-six different hospitals. Flexner thus describes a clinical course which he attended:

> Some of the instructors enjoy an international repute for their skill in hitting off the needs and preferences of the foreign sojourner. Native students are rarely found in their classes. . . . . The instructor shows and discusses one case a day: his auditors are seated about the bed, only rarely verifying his pronouncements as to the condition of heart, lungs, tongue, or pupil; none participating actively. In Berlin I observed similar courses in pathology and serology. All the students were foreigners, and the instruction was elementary enough to amuse the docent who, with great skill, vigour, and intelligence, was doing precisely what his little band of transients had paid for.

Thirty years ago, apparently, postgraduate schools in the United States were no better. In a report by the American Medical Association it is stated that there were no standards of admission to the courses, no definite curriculum, no fixed period of training, and that the granting of certificates and diplomas was greatly abused. Many proclaimed themselves specialists after superficial courses.

London at that time was well in the rear so far as postgraduate teaching was concerned. Some will recall a valiant little effort in what was known as the Polyclinic in Chenies Street, Tottenham Court Road. An organization was also created for the admission of visitors to clinics, lectures, operations, and necropsies at a small number of hospitals, but these were the routine exercises of the undergraduates, and something rather different was wanted for the postgraduate. In Edinburgh and Glasgow vacation courses for graduates were held at the royal infirmaries, the subjects being general medicine and surgery. A tribute should be paid to Scotland, always zealous in education, for much pioneer work in the postgraduate field. Then in 1935 the British Postgraduate Medical School at Hammersmith was opened and has largely canalized postgraduate effort in London. It is out of that school that the new Federation has arisen. Its central office will be responsible for the organization of postgraduate study for general practitioners in the London and Home Counties region and will be a source of information and a channel of distribution for all parts of the country, serving both the home and the overseas postgraduate student.

Many claims could be made for London as the future postgraduate centre of the Empire and beyond. It has twelve great voluntary hospitals associated at present with undergraduate medical schools, thirty other large voluntary hospitals and innumerable smaller ones, special hospitals in every branch of medicine, and the largest and most efficient local authority hospital system in the world. It presents an unrivalled field for observation and study by the visiting student. In addition to the geographical and social advantages of this country the instruction here will be given in a language which is now foremost among all the languages of white peoples. Often in the Continental schools of other days the students were unfamiliar with the language, and so got no real contact with what was valuable or characteristic in Continental medicine.

One promising experiment in postgraduate education which was being tried successfully in London and in other centres before the war was the institution of intensive two weeks' or one week's refresher courses for insurance practitioners. The intention was that every insurance practitioner should attend such a course once in three years and that his expenses, including the cost of a locum tenent, should be met. The Ministry of Health is now contemplating the reintroduction of such courses subject to the willingness of the universities to continue during 1947 the courses of postgraduate instruction they have been providing for demobilized officers. The discussion in the Insurance Acts Committee on the Ministry's proposals will be found reported at page 391 of this issue. All these arrangements are preliminary and without prejudice to those which will be necessary under the National Health Service proposals. The new Service will require an efficient scheme of continuous postgraduate study, and there must needs be such an easing and facilitation of the work of practitioners that they will have time and opportunity to take advantage of it.

UNESCO AND MEDICAL CONGRESSES

A little less than a year ago an international conference was held in London to draft the constitution of the United Nations Educational, Scientific, and Cultural Organization —UNESCO—as a specialist agency of the Economic and Social Council of UNO. The headquarters of UNESCO will be in Paris, and a general conference of the new organization will be convened there in November of this year. The following statement defines the general objective of UNESCO: "The States parties to this Constitution, believing in full and equal opportunities for education for all, in the unrestricted pursuit of objective truth, and in the free exchange of ideas and knowledge, are agreed and determined to develop and to increase the means of communication between their peoples and to employ these means for the purposes of mutual understanding and a truer and more perfect knowledge of each other's lives." Among the functions of UNESCO are the maintenance, increase, and diffusion of knowledge by, among other measures, "initiating methods of international co-operation calculated to give the people of all countries access to the printed and published materials produced by any of them."

The work of UNESCO is to be done through various divisions, and medicine will find its place in the Natural Sciences Division, at the head of which is Dr. Joseph Needham, F.R.S., assisted by Dr. I. M. Shukova and others. Medicine offers a fruitful field for co-operation among the various countries of the world. The problems of medical science are international, and in these days no doctor in one country can afford to be ignorant of what doctors in other countries are doing—this quite apart from the question of the spread of infection across national frontiers now facilitated by air travel. Before the war some attempt was made to diffuse medical knowledge through the holding of international medical congresses in various special subjects. It is, however, not unfair to say that the arrangements for these congresses were fitful and depended often enough upon the enthusiasm of individuals. Not only was there some lack of continuity in the congresses arranged for a special subject, but there was no co-ordination between the various congresses in respect to either time or place of meeting. It would, for example, be a great convenience if congresses in related subjects could be held in the same place in a given year with an interval, say, of two or three days between each. A gynaecologist attending an international congress of obstetrics and gynaecology would find it a great convenience to pass straight on to, say, an international congress on endocrinology if he knew well in advance that these two congresses were to be held in Paris in a certain year, with an interval of one or two days between each. On occasion two congresses might overlap in time with a view to giving up one or two days to joint discussions. There is no need to labour the point further, but if in fact some central co-ordinating mechanism could be devised much time, effort, and money could be saved, and the world of medicine would benefit greatly.

The Natural Sciences Division of UNESCO under Dr. Needham is now considering what steps could be taken to achieve this desirable end. The moment could not be more opportune, because various international organizations are now trying to pick up the threads of their peacetime work and are revising their constitutions and planning future congresses—but all this in ignorance of what other similar organizations are up to. The Natural Sciences Division of UNESCO hopes that it may be possible some time next year to hold a conference in Paris of delegates of the various international medical congresses and societies with a view to forming some small central organization within UNESCO which will help the various congresses in their numerous problems and so co-ordinate meetings to the greatest convenience of those taking part in them. What might emerge from such a conference would be a Permanent Commission of International Medical Congresses with a small secretariat linked to the Natural Sciences Division of UNESCO. In this way congresses could be arranged so that there would be no confusion of time and place in the various meetings and so that meetings of congresses in related branches of knowledge could be correlated. With the funds that will be at their disposal UNESCO could obviate some of the financial obstacles to travel in the case of those in need of assistance as well as facilitate the transit of delegates from different parts of the world. Through its field science co-operation stations in different countries UNESCO would also be able to secure the co-operation of various national organizations. To diffuse as widely as possible the information that would be forthcoming in the various conferences the proceedings of the various meetings could be published in full in an international journal at whatever frequency experience might show desirable. A monthly bulletin could also be issued which would give details of future meetings, of arrangements for travel, and of the help that UNESCO would be able to extend to various national delegates. This work, too, would presumably be linked with that of the World Health Organization.

These plans are yet in the formative stage and can come out of this stage only if the full and willing co-operation of those now responsible for the work of the various international congresses is secured. It is much to be hoped that co-operation will not be withheld. In a world still sadly out of tune because of national discords the world of medicine has here a chance to show how professional groups, through unity of interest, can give a useful object lesson to the politicians whose rantings so often tend to smother the small voice of reason. We would urge those interested in the plan outlined above to communicate with Dr. Joseph Needham, F.R.S., at the Headquarters address of UNESCO, Natural Sciences Division, 19, Avenue Kléber, Paris, XVI^{e}.

MEDICAL STUDENTS IN WARTIME

The teaching hospitals unfortunately suffered badly from aerial bombardment during the war: buildings and great quantities of equipment were destroyed often overnight, travelling facilities disrupted, and the time of students and teachers sometimes occupied by dealing with emergencies rather than by an orderly educational programme. The London schools suffered most severely, and the circumstances prevailing in the latter half of 1940 enforced their rapid dispersal throughout the sectors of outer London. This physical displacement, combined with the anxieties aroused by our critical situation in the early years of the war and by the blitzes, laid a heavy burden on students already encumbered with the longest of all academic curricula. That these trials were overcome as successfully as they were—an achievement that will be appreciated

especially by those who had any experience of the ineptitude of the young medical officers in the German Army—is due as much to the untiring devotion of depleted and overworked teaching staffs as to the sense of duty displayed by the students themselves. Medical students were of course reserved from military service; the production of doctors was as important as that of bombers; and the duty laid upon teachers and students alike of producing a sufficiency of suitably qualified men was accepted with praiseworthy vigour.

Education as judged by examinations was maintained at a sufficiently high standard; but what of those less easily measurable qualities that exist in all corporate educational institutions—the relationships between students and teachers, the fellowship among the students themselves? To a certain extent the breaking up of the schools was compensated by that sense of national solidarity that pervaded the whole country during the war. Pride at being a member of an honoured and ancient institution naturally declined, but the feeling of being a valuable member of the community as a whole replaced it; the student found in his class something of the comradeship originating in a common and compelling purpose that the soldier derived from his unit. In many cases closer relations between students and teachers were established than had been customary in peacetime; the smaller groups and the difficulties under which they lived (not the least of which was the shortage of textbooks) favoured the growth of oral discussion. A greater variety of clinical cases was often available for teaching purposes; and ingenious expedients and improvisations performed by doctors in general practice, and normally obscured by the perfect organization, plenitude of supplies, and suitable accommodation of teaching hospitals in peacetime, were brought to the notice of the student and incorporated almost unconsciously into his knowledge of medical practice.

Perhaps in the long run the defect in wartime education most to be regretted will be that arising from the lack of any leisure. The student's life was immersed in the acquisition of medical knowledge and the overcoming of obstacles to that end; there was little time for the pursuit of those cultural interests that make a man something more than an efficient technician. This tendency has been apparent in the medical profession for the last twenty-five years; the recent war has done much to accelerate it. It should be the duty of teachers in the immediate future to stress the importance of the epithet "learned" when speaking of our profession. *Gray's Anatomy* conveys no philosophy of life except perhaps the discipline of minute observation; and however necessary this may be to the medical student he will find that his patients will expect him to be not only acquainted with the innervation of the tongue but also able to put that organ to such good use that he may be regarded as a man of uncommon wisdom.

THE MEDICAL WOMAN GRADUATE

The quotas of admission at the various medical schools appear to show that about 500 places are available to women students. This is about one-fifth of the total admissions for the year. The figure given in the Goodenough report for the academic year 1942–3 was 470, or about 21% of the total. The Goodenough Committee came down strongly on the side of co-education, holding that this should be the normal practice in every medical school, and even recommended that Exchequer grants should be conditional upon the schools' admitting a reasonable number of women students. By a "reasonable number" it explained that it meant about one-fifth, though exactly on what basis that proportion is decided is not clear. At one of the schools (Leeds) from which we received information about the new session it was stated that during the war the proportion of women students to men had risen steadily until it reached rather more than one to three, and in spite of this increase approximately thirty applications were received last year for each place that could be allocated to a woman, while for the coming session the number of applications was still larger. If that is the general experience of medical schools the number of young women desiring to enter the profession must be much greater than is commonly supposed. With the opening of more school doors to women there will be less frustration than has been experienced in the past.

In 1944 the Senate of the University of London set up a committee under the chairmanship of Sir Henry Dale to report on the provision of facilities for the medical education of women in London, and, like the Goodenough Committee, this body also urged the opening of all medical schools to women on terms of equal opportunity. The principle of co-education, if it were carried out in London, would have the curious result of admitting men to the London School of Medicine for Women. This school was established to overcome the difficulty which women had in obtaining admission to the medical profession, and it has done excellent pioneering work. It has stated that in the interests of equality it is prepared to make the innovation whereby men as well as women students would be admitted. Another school which during the war years accepted women students only is the West London Hospital Medical School. It is not a pre-clinical school, but its acceptance of about thirty clinical students annually has been of considerable service. Glasgow is a university in which, not in the faculty of medicine alone, women students have always been found in large numbers. In the medical school they are admitted on equal terms with men, and it is stated that owing to the relatively larger number of women applicants the educational standard of the women admitted is conspicuously high. Everywhere the tendency seems to be towards co-education, and one day sex discrimination will be as extinct in medical education as it is in other education and professional fields. But if women are to be admitted they should be ungrudgingly admitted. There is nothing at all to be said for a policy of opening the door to admit a stated minimum and making them feel that they are unwelcome. If the thing is to be done it should be done graciously and gallantly. It is important also that not only should women be admitted to the schools, but that they should have a fair chance of appointments afterwards. The British Medical Association for the last forty years has done much to champion the cause of equality between the sexes with regard to medical appointments and to the emoluments attaching to them. It was not always so even in the history of the Association. It is true that in 1873 Elizabeth Garrett Anderson, who had qualified L.S.A. eight years previously, and had afterwards obtained the diploma of Doctor of Medicine of the University of Paris, was elected by the Metropolitan Counties Branch as a member of the Association. She was not, by the way, the first Englishwoman to obtain a medical degree. The first was Elizabeth Blackwell, who graduated M.D. at the University of Geneva, New York State, in 1849, but was unable to get her name in the first *Medical Register* of 1858. But after Elizabeth Garrett Anderson's election there arose a considerable controversy on this subject, and a plebiscite taken in 1878 showed a majority of three to one against the eligibility of women for membership of the Association. The restriction was broken down in 1892, and since then women have been elected on a perfect equality with men.

EXAMINATIONS

MEDITATIONS ON A PAINFUL THEME

BY

Ff. ROBERTS, M.D.

The important part which examinations are destined to play in our lives is impressed upon us at an early stage in our tutelage. On our arrival home for the holidays we were invariably greeted by our elders with the rather impolite question, "When do you go back?" This we could bear, but worse followed: "Have you passed your School Certificate?" (or "your Higher," or whatever it might be). These unsolicited reminders of our shackles were, it is true, intended as compliments, for it was assumed that a positive answer would be forthcoming; if we happened to have failed there followed a profusion of embarrassed condolences. Of these tactless attentions medical students receive more than their fair share by reason of the long series of examinations which fall to their lot.

Considering their formidable nature, examinations have a remarkable capacity for acquiring pet names—Little-go, Mods, Inter, Stinks Trip, and (formerly at Cambridge) Bugs and Drugs. But such euphemism is not surprising; it is only one example of man's age-long habit of trying to placate evil spirits by pretending to credit them with virtues which they are far from possessing. We give the most painful diseases the loveliest names; the Greeks called the Furies the Eumenides, and sought to make the Black Sea less stormy by changing its name from Ἄξεινος to Εὔξεινος.

Rather naturally, examinations are a favourite subject for oratory at prize-givings and at openings of new sessions. Here examiners are wont to be exhibited, frolicsome as elephants at a circus and human as film stars at a theatrical garden-party, and there is no doubt that students thoroughly enjoy these back-stage revelations, secure in the knowledge that the tiger (to change the metaphor) is safely behind the bars of the ceremonial occasion. After relating a few "howlers" from their unlimited repertoire the distinguished speakers deliver themselves of the old clichés, such as, "Examinations are good servants but bad masters." They then proceed to condemn examiners who "try to find out what you don't know," thereby leaving it to be inferred that they themselves are not of that category. In descending to such banality they ignore the fact that discovering what a candidate knows and discovering what he does not know are essential parts of the same process. His knowledge stands against a background of ignorance. An examiner would rarely have any difficulty in finding out a candidate's deficiencies if such were his intention. He is, however, at any rate in written examinations, bound to a rigid code and to a standard controlled by his colleagues, by the Examining Body which employs him, and by the traditions of the examination. Moreover (candidates may believe it or not), most examiners in correcting papers are obsessed with the fear of being unjust and will go to more pains than candidates deserve in deciphering bad handwriting and in striving to comprehend confused expressions, though they may in the process become prejudiced against the scribblers. Candidates, on the other hand, have far more ethical freedom. They have merely to "satisfy the examiners" in the literal meaning of the term, and they may employ window-dressing as freely as their cunning can suggest. If their bluff comes off the more fool the examiner. An undergraduate may steal a policeman's helmet if he can get away with it, but the policeman may not steal the undergraduate's cap.

The Nature and Purpose of Medical Examinations

At the period of life when Nature imposes the strain of physical growth modern civilization finds it necessary to add a mental strain the like of which is rarely experienced after maturity is reached; and strangely enough we display more intelligence in assessing Nature's handiwork than we do in assessing our own. We judge the rate of physical growth by height and weight, and by races, games, and other feats of endurance, taking care that these trials do not cause over-strain and that we test no more than the maximum capacity obtaining at the time. What we test is ultimately the effect of the assimilation of food and environment on the growing body. The scientific education given to medical students, however, is concerned neither with assimilation nor even with complete digestion, but rather with partial digestion, and the examinations are nothing more than test-meals of the crudest kind. After a period of forcible feeding vomiting is induced and samples are laboriously analysed. Conditions are as unphysiological as they can possibly be, for what is being tested is not a normal end-product but an abnormal intermediate stage. Nor is any trouble taken to make the pabulum assimilable. The pure wine of the reasoning faculty reaches the consumer only after being adulterated by the process of rebottling in successive editions of textbooks. Hence examinations are, in the true sense of the term, the morning after the night before. This explains, too, the discrepancy which has been found to exist between the results of intelligence tests of the matrix type and the results of the basic and preclinical examinations. The former are tests of inborn mental capacity alone, while the latter are tests of inborn mental capacity with its natural development often warped by clumsy and uninspired direction.

Let us, however, take medical examinations as we find them and consider their purpose and nature. Their purpose is to ensure that the student has acquired enough proficiency to pursue his vocation to the benefit of the community. This purpose is fulfilled by the final examinations directly, but by the earlier examinations only indirectly, since these do no more than ensure a knowledge of groundwork believed to be necessary for the appreciation of the final subjects. Owing to this difference in their purpose the preclinical (including the basic) examinations differ from the clinical in their character. First, the preclinical are concerned with subjects to which candidates do not intend to devote themselves. What is to their examiners a life-study is for them only a stage to be hurried through impatiently. Their knowledge is only elementary, and question and answer are cut-and-dried. Clinical examinations, on the other hand, are concerned with subjects which candidates intend to pursue as their examiners do. The examiners are chosen from teachers between whom and the candidates there exists a community of thought rarely experienced at the preclinical stage. Teachers and students, though poles apart in experience, have approached problems together and the students have followed the processes of thought going on in their teachers' minds.

Secondly, while in the preclinical examinations the subject-matter is sharply defined, in clinical examinations there is always the element of doubt. In the former, candidates have a legitimate grievance if there is any ambiguity as to the answer; in the latter they have none. While a physiologist has no right to show a candidate a badly stained slide, a physician has a perfect right to show him a patient who cannot express his symptoms clearly. In practical preclinical examinations, although examiners may avow that they want correct methods rather than correct results, the nature of the experiments is such that the results are a test of the correctness of the methods. In clinical examinations, on the other hand, methods really are more important than results. There is room for wide disagreement about medical treatment and there may be doubts even about diagnosis, though this rarely happens because the examiner enjoys the advantage of having had his own diagnosis confirmed in a pre-view by his colleagues. One wonders what would happen if clinical cases were as fresh to the examiners as they are to the candidates.

Medical examinations are of four kinds: written, practical, theoretical-oral, and clinical-oral.

The Written Examination

The written examination is the best test of systematic knowledge, since it gives the student time to express his knowledge in his own way, to amend what he has written, and to insert afterthoughts undisturbed by criticism or interrogation. Complaints about unfair questions are rare. This is because great care is taken in their composition, and because in a subject which changes but slowly at the undergraduate level questions must in some degree be stereotyped. The commonest fault consists in setting papers which are too long. This results in good candidates spreading themselves over some questions to the neglect of others. It is very difficult to convince students that if they answer only four questions out of five they automatically reduce their potential maximum by 20%. It is giving

away no secret to say that in most pass examinations the higher marks are more difficult to score than the lower in almost geometrical progression. The time spent in polishing an answer so as to make it worth 8 instead of 7 out of 10 is better spent in scoring the lower marks on another question. Question-papers are more effective in distinguishing between good and bad candidates if they err on the side of brevity.

The Practical Examination

Practical examinations should satisfy three criteria. First, the conditions of the experiments should resemble closely the conditions obtaining in normal practice. They should be as free as possible from artificiality. Secondly, if the procedures are simple or are based directly on standard scientific truths they should be performed without books; but if they are of a complex nature involving a succession of operations and a knowledge of quantities, book-directions should be allowed. Such assistance does not mar their value as tests of proficiency. Thirdly, no experiment should be set which contains an element of chance. It is arguable that careful supervision of class-work should make practical examinations unnecessary, but, students being what they are, these examinations provide a better incentive than anything else which can be devised. All the same, it is a good practice to allow candidates to produce at examinations attested records of their class-work.

The Theoretical-Oral

By theoretical-oral I mean an examination where the candidate sits in front of the examiner and answers questions on book-work without the opportunity of giving demonstrations. This type of examination seems to me to serve no useful purpose. It is supposed to enable the examiner to cover more ground than can be covered in the papers, but this is achieved only by flitting about from one part of the subject to another—a practice which puts a premium on knowledge that is merely superficial. If half an hour is considered necessary for answering one question on paper it is clear that, even allowing for the greater speed of the verbal answer, very little substantial ground can be covered in an oral of 15 or 20 minutes—a period which a candidate experienced by previous failures can skilfully reduce by saying that he doesn't know the meaning of the question. Moreover, the candidate is at a great disadvantage. He cannot arrange his thoughts except under the examiner's eyes, and if the examiner happens to start with a question on which he is weak he has great difficulty in recovering himself, knowing all the while that his fate will be sealed when the bell rings. He may repudiate a statement, but he has no assurance that he has expunged from the examiner's mind the impression which his mistake has made. There is a belief that an examination of this sort provides an opportunity for asking questions which are of the nature of riders. But when such questions are asked the candidate looks up to the ceiling in silence. Then, after appearing to say to himself, "Ah, I remember! That's on the top of the right-hand page," forthwith delivers himself of a torrent of textbook stuff. Theoretical-orals are necessary only for testing the capacity for making rapid decisions in emergencies, such as the treatment of an epileptic fit. Apart from this use they should be abolished, their place being taken, if necessary, by additional papers.

The Clinical-Oral

The clinical-oral tests observation, judgment, and logical thought as no other examination can, and it provides the best means of estimating how candidates would acquit themselves in a position of responsibility. It is therefore the ideal form of examination for clinical subjects, and should be regarded as of far more importance than papers. From the candidate's point of view it has the advantage over the theoretical-oral that the object which he is required to study shades him, at least initially, from the (to him) fierce glare of the examiner's eyes, and gives him time to adapt himself to his surroundings.

Like witnesses in court, candidates are liable to the mistake either of saying too little or of saying too much. If every word has to be dragged out of them the examiner cannot cover sufficient ground, while if they say too much they risk making a mistake which they need not have made but upon which the examiner may fasten to their discomfiture. But the worst fault is hedging—a vice calculated to drive the most angelic examiner into a fury of exasperation. Risks must be taken in orals as in other situations, and he who refuses to take them deserves what he gets. Hedging is usually inborn, but not always; it may be the result of an unfortunate experience at a previous attempt. There are some examiners who preserve a non-committal blandness of manner or display affable agreement, giving the candidate no indication of the correctness or otherwise of his answers, and allowing him to build up an argument on a false premise. When afterwards informed of his failure he says, "I don't know why I failed; I thought I answered everything correctly." He spends the next few months in perpetual uncertainty as to whether he knows his work or not; and at his next attempt, imagining the questions to be more subtle than they appear, or suspecting a catch where none exists, he cannot be induced to give a straight answer to a straight question. A candidate's mistake should always be pointed out to him, and if he has acquitted himself poorly he should be given a strong hint of the fact towards the end of the interview. The information may be devastating at the time, but at least he knows where he stands, and the knowledge spurs him to more vigour for his next attempt.

Humour has no place at orals, since however innocent the joke the candidate is not in a mood to believe that it is not being made at his expense. Scorn and sarcasm are of course unpardonable, because the candidate is undergoing an ordeal and because he cannot answer back. The conduct of an oral is indeed a difficult art; it is the art of putting a candidate at his ease, grading the questions so as to bring out the best in him, knowing when to encourage him, and knowing when to pull him up. I am strongly of the opinion that it should not be learnt at the expense of candidates, and that before anyone becomes an oral examiner he should be obliged to spend a probationary period as an observer, studying examiners' methods and candidates' reactions.

Reform

No examinations can be perfect. The personal element can never be wholly eradicated, since examiners are subject to moods and whims just as much as others who sit in judgment. "A good, contented, well-breakfasted juryman," said Mr. Perker, "is a capital thing to get hold of. Discontented or hungry jurymen, my dear Sir, always find for the plaintiff." The fact that the results are usually in conformity with the predictions of tutors may seem to show that examinations serve their purpose adequately. To say this, however, is to admit that they are but the reflection of teaching, and to assume that all is well with teaching. But now that medical education is the subject of so much adverse criticism we may well inquire into the relation between teaching and examinations. It is the old question of the chicken and the egg, but in another form; the question is not which comes first, but which, if either, ought to come first. There is no doubt that it is the examinations which now set the pace. "What sort of questions are they likely to ask us?" inquire students plaintively, to the despair of the educational purist. It has to be admitted, too, that their influence upon teaching is often far from good. The snap question-and-answer into which the theoretical-oral so easily degenerates encourages the "rag" classes conducted by junior members of hospital staffs and by the coaches. Let it not be imagined, however, that I am scornful of the coaches. Under present conditions they fulfil an essential function. It is a polite fiction of the academic beau-monde that they do not exist, but students have to visit them, for from them they obtain that warmth and satisfaction which grey-eyed Athene is too frigid to provide. The absurd practice of questioning candidates on the use of surgical instruments has stimulated instrument-makers to hold gratuitous demonstrations in their showrooms on the previous night—a form of instruction which can hardly be regarded as of University standard. Moreover, the system of combining external with internal examiners, necessary as it may be to prevent a lowering of standards and to protect internal examiners from charges of favouritism, is undoubtedly one cause of the conservatism of medical education, for it reduces the schools to a dull uniformity and prevents them from embarking on imaginative experiments in education.

Of any beneficial effect of examinations upon teaching there is little evidence. Some may find the explanation in the fact that examiners are themselves teachers, and the solution in the

appointment of examiners who are independent of the teachers. Examination by independent examiners, however, has not saved the School and Higher Certificates from adverse criticism, and in a subject so practical and individual as medicine the separation of the two functions could not fail to have a bad effect. The combination of the two functions in the same persons should indeed be a source of strength in both capacities; for examinations provide opportunities for passing judgment not only on students but on the way they are taught, and medical examiners who are also teachers should realize that they are examining themselves and each other no less than their candidates. Now that we are beginning to study medical education we shall find that examinations provide a valuable source of material with which to fertilize the educational field. Improved methods of teaching will benefit examinations, and examinations thus benefited will in turn improve medical education.

THE MEDICAL SCHOOLS

Return to Peacetime Conditions

The opening of the second year of peace finds almost all the medical schools returned to normal establishment. This is true even of the London schools, which suffered most from wartime disorganization and dispersal. In most of the schools the buildings are in full use, though in some the licence to repair is still awaited. The teaching staff is up to—or almost up to—normal strength. This holds good for the schools associated with Middlesex Hospital, Westminster, St. Mary's, and the London. It holds good also for Charing Cross, except for some buildings which are partly unused owing to war damage, and of the London (Royal Free Hospital) School of Medicine for Women, where the buildings, which were heavily damaged in the later stages of the war, are expected to be fully repaired by October. St. Bartholomew's still has 700 beds housed and staffed at St. Albans, but the school buildings are in temporary repair and the teaching staff at normal strength. At St. Thomas's one year of the clinical course is still taken at Hydestile, near Godalming, where in-patient clerking and dressing are done, but with more beds available in London this wartime expedient will cease. Guy's is back on a pre-war basis, save for the portions of the hospital destroyed by enemy action. All senior members of staff have returned, and, with few exceptions, all the junior staff. Beds are still retained at Orpington for special departments (orthopaedics, genito-urinary, and ear, nose, and throat).

Decentralization: An Adverse Verdict

It seemed worth while inquiring of the deans of the London schools whether they considered that any features of their evacuation experience should be permanently retained. The reply from one of the schools was, "No. God forbid!" and most of the others were scarcely less emphatic. The dean of Charing Cross, however, said that the corporate life afforded by a hostel had some advantages which might be beneficially retained, and that consideration was being given at his school to that subject. The verdict of the dean of the London Hospital Medical College was that, on the whole, evacuation has shown that decentralization of undergraduate medical education is not satisfactory, and that teaching can best be based on a hospital of, approximately, 1,000 beds, which provides as far as possible for all branches of diagnosis and treatment. It was also his opinion that anatomy and physiology should be taught in close conjunction with clinical work. Residence at a fever hospital, and possibly at a mental hospital, is desirable, but on the whole decentralization has more drawbacks than advantages.

The dean of King's College Hospital Medical School considered that there was one thing worth retaining from the evacuation experience, namely, the visitation of students to other hospitals.

The Schools outside London

At most of the provincial schools the return to normal has been more easily accomplished than in the several schools of London. At *Liverpool* the reduction of the curriculum from six years to five, which operated during the war, is coming to an end; the next lot of candidates who graduate will have been at the school 5¾ years, and by June, 1948, the normal six years' course will be in operation. The teaching staff at Liverpool is not quite up to normal numbers, but the school buildings, which were partly damaged by enemy action, have been restored to usefulness, even though some of the restoration is incomplete and temporary.

Manchester is for all practical purposes on a peacetime basis, and the staff is almost up to normal strength.

At *Sheffield* the school is in process of organizing and developing in accordance with the Goodenough report and the recommendations of the General Medical Council. The buildings here are more than fully in use, and additional accommodation is urgently needed. The teaching staff is up to pre-war level, but a considerable expansion is called for and is taking place as opportunities arise.

At the other Yorkshire school—*Leeds*—the members of the teaching staff who served in the Forces have, with one or two exceptions, returned, and many additional appointments have been made. Steps have been taken to restore the M.B., Ch.B. course to its normal length of five and a half years, and the transition from the shortened course will be completed next session. Until then the total number of students in the school remains below the pre-war level.

Birmingham is not yet on an entirely peacetime basis, though it is rapidly approaching that condition in the pre-medical and pre-clinical subjects. But it still has four clinical teachers in the Forces, all of whom rank as assistant clinical lecturers, and owing to this and other circumstances the school may actually be worse off for clinical teachers during the coming season than at any time during the war.

Newcastle-upon-Tyne (University of Durham) has its school buildings fully in use and its teaching staff at normal strength, with several departments undergoing expansion.

At *Bristol* some portion of the department of anatomy has been only partially replaced. Temporary buildings are now being erected to relieve the congestion, and entirely new buildings to accommodate at least 80 students a year (instead of the present entry of 60) are being planned and will be erected as soon as possible.

The *Welsh National School of Medicine* is working at normal level, and the same is true of the Scottish schools, though at Aberdeen and Glasgow the teaching staff is still not quite up to normal strength.

At *Edinburgh*, where many new developments are envisaged, the teaching staff is at normal numbers, but considerable increase will be necessary in the future.

More Open Doors for Women

Several of the London schools now admit a proportion of women students. Apart from the London School of Medicine for Women, which normally has about 450 students, pre-medical, pre-clinical, and clinical, and admitted 103 new students last session, University College Hospital takes twelve women students a year, Westminster will have six women students entering the pre-clinical department (at King's College) in October, St. Thomas's will break with tradition with a 15% entry of women students in 1947, and at the London Hospital Medical College women students up to 20% are expected to start the first M.B. in October of this year, and the second M.B. in October, 1947. At Charing Cross women students will be admitted when the school buildings, still partly unused owing to war damage, are restored. At St. Mary's, Middlesex, and St. Bartholomew's no women students will be taken until October, 1947, at earliest.

During the war the proportion of women students to men rose steadily at Leeds, and is now more than one to three. In spite of this increase approximately thirty applications were received last year for each place that could be allotted to women, and this session the number of applications is still greater. At Sheffield between 20 and 25% of the students are women, again a mere fraction of the applications. At Birmingham, again, women students make about one-fourth of the entry list. At Liverpool before the war the proportion was fixed at one-fourth, but during the war it reached 40% at one time; it is the intention to return to 25% as soon as possible. The number to be admitted in 1946

depends upon the number of eligible ex-Forces applicants by the beginning of September. At Bristol, where 25 of the last autumn entry of 60 were women, the proportion is likely to be considerably reduced in the future. At Newcastle women are admitted on equal terms with men, though in smaller numbers. In the Welsh National School of Medicine, by the charter of the university there is no restriction on the admission of women candidates, and the same is true of Scottish schools. At Glasgow, owing to the relatively larger number of women applicants, the educational standard of the women admitted to the Faculty of Medicine is very high. At Aberdeen, where about 25 women students have been admitted annually during the war, the entry is expected to be reduced owing to ex-Forces candidates.

The West London Hospital at Hammersmith also serves a useful purpose in training women medical students. This is not a pre-clinical school, and the majority of the students come from King's or University Colleges (University of London) or from Oxford or Cambridge. Only women students have been accepted during the war years, and at present the acceptance is about 30 clinical students annually. This hospital was recognized by the University of London and other licensing bodies in 1937 as an undergraduate school, but it appears to be the policy of the University to remove recognition from this school in a few years' time in accordance with the Goodenough report, and it has been suggested that the future of the school should lie in the postgraduate field in association with the Federation of Postgraduate Medical Schools which has been instituted by the University.

Altogether, disregarding for the moment the forecast in some schools of a lowered quota of admission, it appears that there are about 500 places for women clinical students in the year's entries.

Ex-Forces Candidates

Arrangements are very general for the admission of ex-Forces candidates up to 90% of the total available vacancies, in accordance with the recommendation of the Ministry of Labour. At the London Hospital preference is given to ex-Forces candidates, both men and women, for admission as undergraduate students, and every effort is made to carry out the Government scheme for the rehabilitation of demobilized medical officers. An introductory course in elementary medicine and surgery, lasting three months, on the lines recommended in the Goodenough report, was given during the last academic year and proved a great success. Pre-medical education for "London" students is carried out at Queen Mary College (University of London), Mile End Road, and in view of the fact that this is inadequate to meet post-war demands from demobilized officers who have not taken their first M.B. from school, like scholar applicants, arrangements have been made by the London for their pre-medical education at various polytechnics. The majority of entries at the pre-clinical school at Guy's for the coming year are ex-Service men.

Westminster Hospital School not only gives the 90% priority but has doubled the number of registrar and B2 posts for postgraduate training. At St. Thomas's, again with 90% priority, a special bureau, under the control of a late member of the staff, has been maintained since the end of the war to help all old graduates returning from the Services. Several resident appointments are filled by these ex-Forces people, and about sixty, including many working for higher degrees, are attending a six months' rehabilitation course. At the West London Hospital Medical School arrangements have been made to appoint a certain small number of ex-Forces medical men to junior teaching posts.

No school mentions any readjustment or shortening of the course for ex-Forces applicants, and indeed the large majority of these people will be required to take the pre-registration course, which may add a full session to their training, and is not normally taken by the students at some schools, where the higher school certificate in physics and chemistry at recognized standard is accepted as satisfying pre-registration requirements. This is so at Leeds, where postgraduate instruction is also being provided under the Government scheme for the further training of demobilized medical officers.

Birmingham hopes to accept all suitable ex-Forces candidates who live in the Midland area. At Newcastle normal matriculation requirements are not deemed indispensable provided the applicant can show that he has the ability to undertake the course. Manchester has a special examination known as the "mature matriculation" for those who have not satisfied the requirements for entry. Liverpool anticipates having about 65 ex-Forces people in the first M.B. and about eight new admissions to the second M.B. In addition about ten ex-Forces candidates were admitted or readmitted in the first and second M.B. courses during 1946, and most of these will be in the second M.B. course beginning in October. Priority is also given at Liverpool to ex-Forces applicants for postgraduate degrees and diplomas, and 90% of those accepted for the three degrees are from the Forces.

At Edinburgh, with the return of former students from the Forces, arrangements have been made to provide them with special courses and other facilities for revision of their previous work. The usual priority for admission to this school is accorded to ex-Forces applicants, but no shortened course has been instituted. At the medical school of Queen's University, Belfast, ex-Forces men and women of Ulster origin or sons and daughters of graduates have priority for admission. Ex-Forces students are also granted certain concessions in examinations; for example, it is possible for them to be credited with a pass in individual subjects of the curriculum provided they complete the examination within one year, unlike the ordinary student who is required to pass the full professional examination.

The Mechanics of Teaching

It seemed appropriate to address a question to the deans on any developments in the mechanics of teaching, such as the use of the film. A committee of the British Medical Association, under the chairmanship of Sir Lionel Whitby, is exploring the use of the film in medical education, and much preliminary work in the same field has been done under the auspices of the Royal Society of Medicine. The epidiascope and the film projector seem now to be installed in all medical schools and to be used alike in the pre-medical, pre-clinical, and clinical courses. At Westminster Hospital Medical School a visual education unit has lately been established, specializing in clinical photography and in the production of lantern slides, film-strip, and films; a film library is being formed there. From Leeds it is reported that the use of films in medical education is increasing steadily; the students there have formed, jointly with the local medical profession, a film society. Newcastle is trying to arrange a department in which photography and all aspects of visual education will be concentrated. At Liverpool, in addition to the usual methods, mechanical appliances are used in the school museum in the form of special models to illustrate physiological and pathological exhibits. But it is evident from the remarks of several of the deans that certain limitations of the film as an instrument of education have not yet been overcome, and at Sheffield it is stated that mechanical methods have not been introduced to any great extent because it is thought there is some danger of the film leading to a stereotyped and mass-produced instruction.

Developments at Some London Schools

The University of London still has the Goodenough report under consideration by the relevant University committees, and until the Senate has considered the matter it is not possible to make any general statement on future policy. One thing, however, may be said, namely, that the wartime arrangement permitting candidates to enter for the M.B., B.S. examination after a clinical course extending over thirty months instead of thirty-six months has been withdrawn in respect of all students who passed the second examination for medical degrees in, or after, March, 1945.

Some of the London schools are facing large developments. *St. Thomas's*, with an annual entry of some 80 students, is now back in its old home facing the Houses of Parliament. Its medical and surgical units are being re-formed and await the appointment of their new professors. The pathological department has expanded into a chair of bacteriology, and an occupational therapy department is being developed. The library plays an active part in school life, and the museum will soon be open. The future for St. Thomas's holds great changes. A new school is to be built at the corner of Westminster Bridge

and Lambeth Palace Road, with hostels for students opposite the present hospital, which is going to be largely rebuilt and extended. A new out-patient department is scheduled for early erection. All the departments for pre-medical and pre-clinical teaching will be much enlarged, with adequate facilities for teaching and research. A midwifery and gynaecological unit is to be created, and a chair of social medicine is in contemplation for a later date. Facilities exist at St. Thomas's for students to take the B.Sc. degree in their second M.B. subjects before beginning clinical work in the hospital. The academic year is divided for the pre-medical and pre-clinical periods into three terms and the clinical period into four.

Westminster Hospital Medical School, which in building and equipment is the newest in London, has at the moment 130 male students (clinical); this number will be increased to 150 in 1947–8, and to 200 by 1951–2. The latest entry is 24. Long-term plans include affiliation with St. Stephen's, an L.C.C. hospital with 700 beds, for an increase in clinical facilities generally, with the Infants Hospital (100 beds) for the teaching of paediatrics, with the Grosvenor Hospital (58 beds) for the teaching of diseases of women, and with the Gordon Hospital (40 beds) for the development of teaching in rectal diseases. These last three hospitals are all in Vincent Square, within five minutes' walk of the hospital.

The entry at *Charing Cross* is at present 30 a year, but when the school buildings are fully in use it will be 45. Fevers is the only subject taken extra-murally. Plans are now in an advanced stage for the rebuilding of the school and hospital at Harrow. The repairs which are proceeding will enable the instruction in the pre-clinical subjects of anatomy and physiology to be resumed at Charing Cross—a development which is regarded as of the very greatest importance.

At *St. Bartholomew's* the latest entry is 125. Arrangements for pre-medical students are now the same as before the war. Certain long-term plans are set out in the report of a Policy Committee, but the main immediate objectives are, first, the permanent rebuilding both of the damaged hospital and college, and, secondly, the establishment of additional whole-time chairs to enlarge the teaching in clinical subjects, for example, therapeutics and radiotherapeutics.

Middlesex Hospital has its buildings fully in use and can take 80 students annually. Students are admitted to the recognized courses of study for the first M.B.

London (Royal Free Hospital) School of Medicine for Women, with an annual entry of 100, is resuming its pre-medical course at the school itself as in pre-war times. During the war, and until the present session, its physiology and organic chemistry departments enjoyed the hospitality of Guy's.

St. Mary's, Paddington, has an annual entry of about 66. Here again the arrangements for pre-medical students are as before the war. The long-term plans include rebuilding and expansion to an annual entry of 100.

King's College Hospital, Denmark Hill, which is now wholly on a peacetime basis, with its teaching staff up to normal, takes between 50 and 60 new students each year. The future long-term plans make provision for 100 new students in a year. Women students have been admitted to King's College Hospital since 1917. The pre-medical and pre-clinical students receive their education at King's College, Strand. It is hoped that practically all the clinical students will have returned to Denmark Hill in October, 1946, when courses on a pre-war basis will be held.

Guy's pre-clinical school has been working to capacity during the year, and the majority of the entries for the coming year are ex-Forces men. Applications for admission have been heavy, but acceptances are limited by accommodation available.

St. George's Hospital Medical School at Hyde Park Corner has returned to normal; indeed, its teaching staff is above pre-war strength. This is one of the small schools, and "all the better for that," thinks the Dean. Its students at any time number not more than 120, which means an entry of about 30 a year. Women students at present represent 10% of the entry; in 1948 they will represent 15%. The school takes students from Oxford and Cambridge, and a few from other universities, but the majority of the remainder come from London, and almost entirely from King's College. At the present time fevers and obstetrics are taken extra-murally, but by the end of the present academic year fevers only will be taken in that way. As for long-term plans it is well known that St. George's Hospital is to be rebuilt in another quarter of London—the south-west. The number of beds will be increased, but the principles of the Goodenough report will be adhered to—an entry of 100 students for 1,000 beds. At present there is an entry of 30 students for 350 beds. "The difficult thing we are trying to do at St. George's," said the Dean, "is to reconcile the tradition of a rather intimate small school with the enlargement of the hospital, and one thing we are resolved upon is never to take in more students than the number for which clinical cases can be provided. We feel that the actual contact of the student with the patient is all-important in medical education."

London Hospital Medical College takes 80 medical students a year, and this year the maximum number has been accepted. The rebuilding of the dental school (25 students a year) is the first priority, and reconstruction of the whole medical school and hospital the long-term plan. There is a hostel for 100 students, to be enlarged as soon as possible.

University College Medical School has arranged to increase its entry by 5%, bringing it to the maximum which can be taken with the present accommodation. The medical course is being revised to conform to the General Medical Council's proposals (36 months). Fevers and some obstetrics are taken outside the hospital. Pre-medical students are accommodated at University College and at Oxford and Cambridge. Future long-term plans include the extension of the school and hospital (1,000 beds) to take an annual entry of 100.

West London Hospital Medical School, although one hospital ward has still to be reopened, has more teaching beds available than ever before, thanks to the association with Fulham Hospital (L.C.C.). The only subject taken extra-murally is obstetrics, at the West Middlesex Hospital; demonstrations are given at special hospitals, especially in mental disease.

Post-war Policy at Oxford and Cambridge

Oxford.—The number of students to be admitted to the Oxford University medical course in 1946–7 is limited by decree of the University, which restricts the entry from schools to 55 men and 10 women, as well as by the regulation of the Ministry of Labour and National Service concerning preference for ex-Forces candidates. Owing to the limited number of places in the medical school a prospective student, after he has been accepted by a College, must be considered and accepted by the University committee set up to select the students making up the quota for the year. After this he is eligible to go into residence and is qualified for admission into the medical school, and thereby for deferment, subject to satisfactory reports of progress, by the Joint Recruiting Board, to which, if he was born after Sept. 30, 1928, he must have made application with his appropriate age group. Oxford is almost back to a pre-war basis, though the Honour School of Physiology is not compulsory for ex-Forces men matriculating before October, 1948. The school can take an annual entry of 70 to 80 for the pre-clinical period, and 25 for the clinical. The latest entry is 46 men from the schools, and 10 women. The number of ex-Forces students accepted outside the quota is not yet determined, but will probably be about 30. Future long-term plans include a new physiology laboratory, extended instruction in social medicine, and improved hospital service and facilities for clinical students.

Cambridge.—The general post-war policy at Cambridge University is to maintain the pre-clinical teaching at its previously high level and to develop a school of clinical research and postgraduate teaching both in specialties and in general medicine, rather than to attempt to found a complete undergraduate school. This is in accordance with the recommendations of the Goodenough report. Plans for postgraduate work have begun to materialize with the reopening of the department of medicine and the creation of a chair of experimental medicine and a chair of radiotherapeutics. Other special departments which are contemplated include paediatrics, dermatology, social medicine, and chemotherapy. In all these special departments there will be opportunities for research students and for training for long or short periods. In general medicine the experience gained with ex-Service postgraduate courses has indicated the need, for the future, of regular courses for

general practitioners of scope and length adapted to their various needs. An essential part of this organization has been the creation of a closer liaison between Addenbrooke's Hospital and the University. The first step in this direction has been the assumption of responsibility by the University for the pathological and biochemical services of the hospital. In the same way it is contemplated that other services will come into close association with the University, including the regional laboratory services and a co-ordinated regional scheme for orthopaedic, thoracic, and neurosurgery. All these plans are designed to make the University the focus of medical research and teaching for the East Anglian region.

The Northern Schools

The annual intake of students at *Leeds* is limited to 85 in the first year, but to 75 in the second year; a larger number cannot be accommodated in the department of physiology, where the classes have for some years been held in duplicate. Immediate activities include the revision of the curriculum in accordance with the G.M.C.'s recommendations. The establishment of full-time chairs in medicine, psychiatry, and paediatrics has been approved and appointments have been made, and the position regarding surgery and obstetrics and gynaecology is under consideration. New chairs have been instituted also in chemical pathology, biochemistry, and pharmacology, and the administration of the school has been strengthened by the appointment of a medical man to a new post of senior administrative officer. Long-term plans include further increases in staff, the establishment of further new departments and sub-departments, the building of a new medical school, and the full utilization of the municipal hospitals for teaching purposes. A general need is the provision of more hostel accommodation.

Sheffield has an entry of about 50 a year at the present time, but hopes to increase it to 80–100 within the next few years. The arrangements for the pre-medical students require the courses in chemistry, physics, and biology to be taken in the University, except in very special circumstances. The long-term plans at Sheffield include a new medical school and teaching hospital, the appointment of a full-time dean, and generally development along the lines of the Goodenough report. At Sheffield, as at Leeds, the need for more halls of residence is felt.

The Medical School at *King's College, Newcastle-upon-Tyne* (University of Durham) can accommodate 380 medical students and 155 dental. The figures for the latest entry are not yet available owing to the recent Government regulations concerning ex-Forces candidates. The normal medical course is now reinstated to the full period of six years after the war-time adjustment. The pre-medical course may be taken in the University, and "first year" students sit the first M.B. examination after one year's study. In addition certain schools are recognized by the University for the purpose of instruction leading to the first M.B. Exemption may be granted from the first-year course and examination if the candidate has obtained the necessary higher certificate qualifications. At Newcastle whole-time chairs have been established in the departments of child health, surgery, and industrial health, and it is hoped to institute similar appointments in medicine and psychological medicine. Plans are also under consideration for the establishment of a department in anaesthetics under a reader.

Liverpool.—The number of student admissions to the Faculty of Medicine at Liverpool is limited at present by bench space. The limit has been put at 100 a year in the second year. The admissions for the first year of study are limited at present by the Faculty of Science to 70, and the number admitted directly into the second year is therefore determined by the number passing up from the first year. But there is no definite limit to the number admissible to the clinical school, and students from Oxford and Cambridge are often admitted after their pre-clinical years. Postgraduate students admitted during the past session numbered about 80, of whom 23 were for the D.P.H. For 1946–7 there will be larger numbers in the courses reading to the D.P.H., the M.Ch.Orth., and the new Mastership in Radiology. Pre-medical courses are covered by the first M.B. examination taken internally in the departments of physics, chemistry, zoology, and botany of the University. In addition the University of Liverpool, during the war, has accepted the higher school certificate of any British Examining Board with passes at principal standard in physics, chemistry, and biology (or zoology and botany taken separately) as exempting from the first M.B. This wartime exemption on higher school certificate is still in operation.

Long-term plans at Liverpool are largely conditional on rebuilding, the accommodation being strictly limited. Future policy in respect of the curriculum will be reconsidered when the G.M.C.'s report on the subject is made public. Associated with the Medical School in the Faculty of Medicine are the School of Tropical Medicine, the School of Dental Surgery, and the School of Veterinary Science, all of which are undergoing increased development at the present time. The Medical School embarked on several new ventures during the war and contemplates others in the near future. A large and important department of child health has been constituted under a half-time director, who is also Professor of Child Health. This department has been granted special facilities and accommodation not only in the Royal Liverpool Children's Hospital, but also in the municipal hospital for children. A department of neurology with a professor in neurosurgery has been approved, and the appointment of the professor will be advertised shortly. Last year the University appointed its first full-time professors in clinical subjects, namely, in surgery and in obstetrics and gynaecology, and these departments are now in full swing and are undertaking considerable postgraduate activities, both in respect of the training of specialists and in research.

The *University of Manchester Faculty of Medicine* can take between 90 and 100 students per session. Pre-medical students are admitted in the normal way. Among the amenities of the school is a first-class physical education centre. A new department of industrial medicine was instituted at the University last year, and a chair has been founded in association with it. A dean of post-graduate medical studies was recently appointed with a committee to help him.

The Midlands, West of England, and Wales

Birmingham.—The Medical School at the Hospitals Centre, Birmingham, is designed to take 60 medical students a year, but this number is being increased in the near future to 120. This increased number will mean the duplication of many classes, particularly in pre-clinical subjects, and an increase in the staff. The latest entry is between 80 and 90. The majority of students take their pre-medical course at school, and rather more than a third of the number take the pre-medical course at the University. The readjustment of certain courses is contemplated, and in particular there is being started next year a preliminary instructional clinical period consisting of integrated classes in medicine, surgery, pathology, and pharmacology, as recommended in the Goodenough report, the course taking three months immediately after the examination in anatomy and physiology. Full-time professors in medicine, surgery, midwifery, and gynaecology, and in paediatrics and child health have recently been appointed, and the occupants of these chairs will take up work at the beginning of the next session. During the last year liaison between the preventive medical services and the City of Birmingham in connexion with child health and the Children's Hospital has been brought about. Close association with civic work is also maintained in the Department of Social Medicine and it is hoped that the clinical facilities of the municipal hospitals will be made available for students in the future.

Birmingham receives about 600 applications for the vacant places in the school and a number of these are from students overseas. It has undertaken to admit a certain proportion of colonial students, but with the limited accommodation it is unlikely that other oversea students can be admitted.

The *University of Bristol Medical School* takes an entry of about 60 students a year. The curriculum is now on its pre-war basis, the wartime shortening of the clinical period having been brought to an end. Pre-medical students are given special courses for the first M.B. Several have exemption from this examination by obtaining a higher school certificate in the subjects concerned.

The school has lately made arrangements for the reintroduction of the course for the D.P.H. It has also instituted diplomas in psychological medicine and in medical radiology and a certifi-

cate in public health. In addition, during the coming session, it is expected that a course will be arranged for the diploma in physical medicine.

The *Welsh National School of Medicine* at Cardiff continues to teach students mainly for the degree of M.B., B.Ch.(Wales). For admission to this degree candidates must possess a degree in arts or science normally involving three years' residence in the University College of South Wales and Monmouthshire before entering the school. During the war this requirement was suspended for those students entering the college who had been exempted from the pre-medical courses and examinations. The number of students admitted is governed by the available accommodation both in the college and the school, and is normally between 40 and 50. Any loss during the pre-clinical years is made up by the admission of a certain number of students to the school from other universities who are studying for qualifications granted by other licensing bodies. For the forthcoming session the University of Wales, like others, is required by Government decision to give absolute priority to ex-Forces applicants who are academically qualified for admission, and it is anticipated that few students, men or women, will be admitted direct from the schools. The school, jointly with the Cardiff Royal Infirmary, has formed a Future Policy Committee, which has under consideration the establishment of a university medical teaching centre, with a teaching hospital of 1,000 beds and providing for an annual intake of 100 clinical students.

The postgraduate courses for C.P.H. and D.P.H.(Wales) under the new rules of the General Medical Council are being conducted, and those for the tuberculous diseases diploma (Wales) are being resumed this session. The school is administering for the Ministry of Health the scheme for postgraduate training of demobilized medical officers. The placing of Class I officers in hospitals creates a little difficulty in finding resident posts for recent graduates, but an effort has been made to retain a sufficient number of vacancies for them. It is anticipated that this difficulty will not be of long duration and will not affect those now entering upon their studies.

The Scottish Schools

Edinburgh.—Very large numbers of candidates still apply for admission to the Medical School of the University of Edinburgh; last year the applications numbered 900, and this year they have reached the figure of 1,500. Approximately 200 new students are admitted in October of each year. Normally applications for admission must be submitted not later than July 1 of the year in which the student wishes to begin the medical course. Medical students in Edinburgh University undertake the full course of instruction, including the pre-medical subjects of physics, botany, chemistry, and zoology, in the medical school. The long-term plans at Edinburgh include broadly the extension on a large scale of accommodation and facilities for teaching and research and also the establishment of hostels for students.

During the war Edinburgh afforded a home for the Polish School of Medicine. This school is still functioning in Edinburgh, but no decision as to its future has so far been reached.

Surgeons' Hall, the school of medicine of the Royal Colleges of Edinburgh, is a teaching body only; it offers courses for the qualifying examinations of the Conjoint Boards. The maximum number admitted in the first year is 72—a total of 360. After October, 1947, a pre-medical year of study will be introduced.

Glasgow.—The Faculty of Medicine of Glasgow University admits 180 students every year to first-year medicine and, in exceptional cases, a small number directly to the later years of the curriculum. Applications for admission to the Faculty have to be made during the last fortnight of May, for entry in the following October. Selected candidates are summoned for interview by the Selection Board, usually in July, but special arrangements have had to be made this year in view of the priority given to ex-Forces candidates. All entrants are required to possess the Scottish Universities Entrance Board Certificate of attestation of fitness, which is issued on the results of the candidate's school-leaving certificate. The curriculum in medicine at present extends over five years, but it is likely that a six years' curriculum, which was ready to operate in 1939, will soon be brought into force. This new curriculum will first be reviewed in the light of recent official recommendations. The curriculum has not been shortened during the war, but the dates of the final examination have been changed, which has had the effect of enabling students to graduate in a minimum period of four years and nine months without reducing the period of instruction. This arrangement is being continued for the present.

At Glasgow four large general hospitals are associated with the University for the teaching of clinical medicine and surgery. Clinical obstetrics and gynaecology are taught mainly in the Royal Maternity Hospital, and paediatrics in the Royal Hospital for Sick Children, while special subjects are taught in the appropriate departments of the numerous hospitals in the area. In addition a large amount of postgraduate teaching is undertaken, and this is to be enlarged.

The Glasgow University General Bursary Examination is held in June and is open to men and women applying for admission to the Faculty of Medicine. The examination is on a competitive basis and about twenty bursaries in medicine are available each year.

Anderson College of Medicine at Glasgow and St. Mungo's College are extra-mural schools, offering courses in preparation for the examinations of the licensing boards and universities. Anderson College has an annual intake of 30 medical and 50 dental students. Here also 90% of admissions are reserved for ex-Forces people. The buildings of St. Mungo's are in the grounds of Glasgow Royal Infirmary.

The Faculty of Medicine of the University of *Aberdeen* takes about 95 students a year. The course in Aberdeen is a single course; there is no pre-registration. The curriculum was rearranged just before the war and now covers seventeen terms. The buildings in which the training during the three final years is taken are on a site common to the University and the hospitals.

The University of *St. Andrews* reverted to the peacetime pattern of examinations in 1944, and since then students have been taking their final examinations after 33 months of clinical study, instead of the wartime 30. The school takes 75 students a year. Here again the pre-medical subjects are taken within the University. The school contemplates a long-term policy of expansion in which the Dundee Royal Infirmary will be joined.

Ireland

Belfast.—The Faculty of Medicine of Queen's University, Belfast, draws the majority of its students from the North of Ireland, though there is usually a fairly good admixture from the Dominions, the Colonies, and foreign countries. There are certain priorities for entry, the first being local candidates, sons and daughters of graduates, and applicants from the British Commonwealth. There has been a limitation of the annual number of entrants since 1939 to 112, but as a special concession to those discharged from the Forces the number has now been raised to 130. The entry for 1946 has filled all available places, and well over 100 applicants have had to be refused. The only change in the curriculum has been the continuation of the wartime reduction of the six-year course to five and a half years, but from October next the six-year course will again obtain. Students are generally accepted only for the complete course. Applicants are required to pass University matriculation and also the pre-medical examination in chemistry and physics.

With increased grants there has recently been an extension of the medical staff. The chairs of medicine and surgery have been made full-time chairs with limited practice. The professors will be full members of the honorary staff both of the Royal Victoria Hospital and the Mater Infirmorum. Lectureships in embryology, histology, applied pathology, and pharmacology, and tutorships in medicine, surgery, and obstetrics, as well as a number of positions of registrar in these subjects, have been established. It is intended to rebuild the clinical departments of the school, to expand the Institute of Pathology and the departments of anatomy and physiology, and to increase the laboratory facilities for research generally. A new curriculum, based upon the recommendations of the Goodenough report but using to the best advantage the local facilities for teaching

and research, comes into effect in October. Clinical studies are pursued at a number of teaching hospitals associated with the University, and altogether over 1,200 general hospital beds are available. Various special hospitals are also recognized by the Faculty. Three hospitals concerned with ophthalmology and otolaryngology have recently been fused into one centrally placed hospital.

Plans for the development at Belfast of a postgraduate school are under consideration. At present the postgraduate facilities are being used to the full in the rehabilitation of ex-Forces graduates, of whom 650 are now taking or awaiting them.

Dublin.—The courses and examinations leading to the degrees in medicine, surgery, and midwifery in Trinity College, University of Dublin, proceed as usual. The University is offering a diploma in obstetrics, for which a course is held at Trinity College and at the Rotunda.

The University Colleges of Dublin, Cork, and Galway are constituent colleges of the National University of Ireland. The work in the medical schools here also is proceeding as usual.

The Royal College of Physicians of Ireland grants to registered medical practitioners, after examination, licences in medicine and midwifery and membership of the College. Fellowship is by election from the members.

The Royal College of Surgeons in Ireland has under its direction the Schools of Surgery, including Carmichael College and Ledwich School. Together with the Royal College of Physicians of Ireland it grants a conjoint licence in medicine, surgery, and midwifery, a final registrable qualification.

THE MEDICAL REGISTER

Numbers Entering the Profession

The General Medical Council, the full title of which is the General Council of Medical Education and Registration of the United Kingdom, constituted under the Medical Act, 1858, is not an examining body. Its special function in medical education is to ensure that in the various schools and licensing bodies certain minimum standards of teaching and examination are required. This is done by means of recommendations and the visits of inspectors. The Council is responsible also for the discipline of the profession, an activity which brings it more prominently to the notice of the public, but its task in laying down the standards required for admission to the *Medical Register* is at least of equal importance.

A qualified medical practitioner is required to register with the General Medical Council before he is permitted to practise his profession. The names appearing in the *Medical Register* for 1946 number 75,133, of which about 47% are registrations in England, 27% in Scotland, and 13% in Ireland; 7% are colonial registrations, and 0.5% foreign. In addition 5.5% (comprising 4,168 names) are temporary colonial and foreign registrations, relating to persons temporarily registered in pursuance of the Medical Register (Temporary Registration) Orders, 1940 and 1941, made under Defence Regulation 32B. This number is now diminishing.

The number of names in the *Medical Register* on Jan. 1, 1946, was the largest ever recorded, being 1,487 more than on the corresponding date of 1945, 3,251 more than in 1944, 3,500 above the average of the last five years, and some 14,000 above the average of the last twenty. The number of persons on the *Register* in 1932 was only three-fourths of what it is at present.

At the beginning of the present century the number of newly qualified persons registered each year was about 1,300. During the war of 1914–18 it went up to 1,500, and in 1924 it suddenly rose to 2,800, this figure being the result of the greatly increased entry of students at the end of the war. It fell again in 1930 to 1,500, and subsequently it gradually crept up, rising consistently almost every year until 1942, when it reached a peak at 3,556. Since then the numbers have fallen, and for the year 1945 the number of new registrations was 2,666.

There is an annual wastage by reason of death of about 1,100 from the *Medical Register*, and anything from 50 to 80 names are removed annually under various sections of the Medical Act. The numbers added by registration during the years since the beginning of the war, the numbers removed, and the state of the *Register* on December 31 of each year are set out in the following table:

	New Registrations	Removals	Names left on *Register*
1939	2,968	1,027	63,360
1940	2,384	1,102	64,679
1941	3,296	996	66,992
1942	3,556	1,127	69,428
1943	3,532	1,091	71,882
1944	2,971	1,218	73,646
1945	2,666	1,190	75,133

Students' Registration

The number of students admitted to the medical schools in Great Britain and in Eire in 1945–6 is estimated by the General Medical Council to have been 2,610. This is almost identical with the actual number for the previous year (2,612), and above the average for the war years (2,480). The student entry in recent years has been as follows:

1938–39	1,735	1942–43	2,468
1939–40	2,623	1943–44	2,426
1940–41	2,398	1944–45	2,612
1941–42	2,361	1945–46	2,610 (estimated)

The figures of recent years accord with the Goodenough Committee's recommended entry of 2,500 to 2,600 as being desirable at present.

The address of the General Medical Council is 44, Hallam Street, London, W.1.

EXAMINING BOARDS

The English Conjoint

The Examining Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England examines candidates for the qualifying diplomas of L.R.C.P., M.R.C.S. Copies of the latest emergency regulations, issued in May, 1946, may be obtained from the Secretary of the Examining Board, Examination Hall, Queen Square, London, W.C.1.

Four examinations have to be passed—a preliminary examination in general education recognized by the Board; a pre-medical examination conducted or recognized by the Board; a first examination in anatomy, physiology, pharmacology, and materia medica conducted or recognized by the Board; and a final examination in pathology and bacteriology, medicine, surgery, midwifery, and gynaecology. Candidates are required to complete the medical curriculum extending over not less than 54 months of study at recognized medical schools and hospitals, and to pass the professional examinations in accordance with the regulations after passing any two parts of the pre-medical examination. The examinations of the Board are conducted four times a year, and candidates are required to give notice in writing to the secretary of the Board twenty-one days before the examination. The Board does not itself conduct the preliminary examination in general education, but recognizes for the purpose a number of matriculation examinations conducted by, and entitling candidates to enter, the medical faculty of a recognized university, also the possession of certain school-leaving certificates.

The subjects of the pre-medical examination are chemistry (inorganic and organic), physics, and biology, including the elements of genetics. The first medical examination is in two parts: the first, anatomy (including histology and embryology) and physiology, being written, oral, and practical; and the second, pharmacology and materia medica, being oral only. In the final examination, in pathology, medicine, surgery, and midwifery and gynaecology, the second, third, and fourth parts are written, clinical, practical, and oral; the first part, pathology, is written and oral only, and may not be taken alone as the last part of the examination. The other parts may be taken in any order. Candidates who produce evidence of not less than 24 months' recognized clinical study subsequent to passing in anatomy and physiology are admissible to any one part

only of the examination, subject to production of certificates. On the completion of 27 months of recognized clinical study candidates are admissible to one or two further parts, or, if presenting themselves for the first time, to three parts, subject again to the production of the necessary certificates. Candidates may not enter for the last part of the examination until they have completed 30 months' clinical study.

Before being admitted to the final examination candidates have to produce evidence of having attended certain specified courses at a recognized medical school and hospital; of general out-patient and in-patient attendance at a hospital during 30 months, six months' medical clinical clerkship, six months' surgical dressership, and three months' gynaecological clerkship; of attendance at five labours by a teacher or member of the staff of an approved hospital, and of having subsequently conducted 15 other labours; of having received instruction in children's diseases and the care of infants, and in the eye, throat, nose and ear, and skin departments of general hospitals or at special hospitals, and of having received instruction in venereal diseases, radiology, and vaccination, and of having attended courses, including clinical demonstrations, at a fever and at a mental hospital. Finally—what cannot be very difficult in view of the length of this discipline—the student must show that he is at least 21 years of age.

The Scottish and the Irish Conjoint

The Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow have an arrangement whereby the student may obtain after one series of examinations the diplomas of all three bodies. Candidates for the examination of the Scottish Conjoint may work at any of the medical schools of Great Britain and Ireland. Details may be obtained from the registrar, 18, Nicholson Street, Edinburgh, 8.

The Conjoint Board of the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland issues a joint licence in medicine, surgery, and midwifery, and accepts candidates from most of the medical schools at home and overseas. The regulations can be obtained from the registrar, Royal College of Surgeons in Ireland, Dublin.

Apothecaries' Licences

The Society of Apothecaries of London grants the diploma of licentiate in medicine and surgery (L.M.S.S.A.Lond.) to candidates who pass in the primary examination, which is held quarterly, and the final examination, which is held monthly, except in September. The minimum period of study is normally five years. Further information may be obtained from the registrar, Apothecaries' Hall, Blackfriars Lane, E.C.4.

The Apothecaries' Hall of Ireland (95, Merrion Square, Dublin) grants the L.A.H.Dubl. to students who pass the three professional examinations.

UNIVERSITY DEGREES

All the universities offer bachelor degrees in medicine and surgery, conferred on the results of examination. All the universities also confer on graduates holding a bachelor's degree the higher qualification of doctor of medicine or master of surgery. The requirements vary, and particulars should be obtained from the different universities. The degree of doctor of surgery, in addition to that of master of surgery, is offered at Durham. Liverpool offers the degree of master of orthopaedic surgery. The University of Dublin, the National University of Ireland, and Queen's University of Belfast offer the degree of Master of Obstetrics.

Higher Qualifications at Royal Colleges

The Royal College of Physicians of London confers its Membership (M.R.C.P.) by examination. A candidate is required to give at least 28 days' notice of his intention to present himself for examination and to transmit such medical and surgical qualifications as he may have obtained, together with a list of his public and other appointments, testimonials, etc. The pass examination for Membership consists of a written examination in the form of a paper on questions of medical anatomy, on pathology, and on the principles of medicine, a paper on questions on the practice of medicine, including the principles of public health, and on psychological medicine, a clinical examination in the medical wards of a hospital, and oral examinations. Fellows of the College are elected annually at a general meeting. (Particulars from the College, Pall Mall East, London, S.W.1.)

The Fellowship of the Royal College of Surgeons of England is granted to those passing primary and final Fellowship examinations. The primary examination is held in the months of April and October. The subjects are anatomy, including normal histology, and applied physiology, and the principles of pathology. This examination is partly written and partly oral. The final examination is held in May and November, and the subject is surgery, including surgical anatomy and pathology. This again is partly written and partly oral, and includes the examination of patients and the performance of operations on the dead body. Candidates who have passed the primary examination are admissible to the final on production of evidence of having been engaged in the acquirement of professional knowledge for not less than two years subsequent to the date of having obtained a registrable qualification, and of having held for not less than six consecutive months a recognized resident post in charge of general surgical patients in the wards of a general hospital recognized by the Council for the purpose. List of recognized hospitals is obtainable from the College, Lincoln's Inn Fields, London, W.C.2.

Membership of the Royal College of Obstetricians and Gynaecologists may be applied for by medical graduates who have been registered or eligible for registration for at least three years. The Fellowship of the Royal College is granted to members who are considered to have advanced the science and art of obstetrics and gynaecology. The address of the College is 58, Queen Anne Street, London, W.1.

Graduates may become Members of the Royal College of Physicians of Edinburgh on passing an examination, particulars of which can be obtained from the secretary at 9, Queen Street, Edinburgh, 2. It is a four-day examination—a written examination on the first day, a clinical examination on the second, on the third a practical examination with reference to the special subject the candidate has professed, and on the fourth an oral examination in medicine and therapeutics and the special subject. For the Fellowship of the Royal College it is necessary to have been for at least three years a member. Every proposal for election of a Fellow by the council of the college must be signed by four Fellows.

Fellowship of the Royal College of Surgeons of Edinburgh is granted to medical graduates who pass the necessary examination (particulars from the clerk of the College, Surgeons' Hall, 18, Nicholson Street, Edinburgh).

Fellowship, registrable with the General Medical Council as an additional qualification, is granted, after examination, by the Royal Faculty of Physicians and Surgeons of Glasgow. The candidate must be a licentiate of the Faculty or a graduate in medicine of a university or medical college approved by the Faculty, and may be examined either in medicine or surgery. Particulars from the office of the Faculty, 242, St. Vincent Street, Glasgow, C.2.

The Royal College of Physicians of Ireland grants membership on the result of an examination and elects Fellows by ballot from among the Members. The address of the registrar of the College is 6, Kildare Street, Dublin. Fellowship of the Royal College of Surgeons in Ireland (St. Stephen's Green, Dublin) is passed in two examinations, a primary in anatomy and physiology, and a final in surgery.

FACILITIES FOR POSTGRADUATE EDUCATION

Arrangements at the Universities

In describing the undergraduate arrangements at a number of schools in the foregoing account, postgraduate schemes have been incidentally mentioned. Every university in the country is making arrangements of some kind, although of course on a much smaller scale than in London, which bids fair to be the postgraduate centre of the country and indeed of the Empire (see the article by Sir Francis Fraser at p. 353). Preparations in many centres have been delayed owing to insufficiency of teaching staff, and priority has had to be given to the Government scheme for demobilized doctors, which has fully occupied the existing staff and equipment. This work is expected to have reached its peak in the present summer, and after this the facilities for postgraduate education should become available for graduates not only from this country but from overseas to an increasing extent. The experience gained in carrying out the Government scheme will itself prove of great value, both in the training of specialists and in the provision of courses for general practitioners.

The British Postgraduate Medical Federation

A little over a year ago the Senate of the University of London gave general approval to a scheme for a federated post-

graduate school as outlined in a report from the existing British Postgraduate Medical School at Hammersmith, and authorized that school to take steps to amend its constitution so as to give practical form to the proposals. Accordingly the central office of what is now known as the British Postgraduate Medical Federation was opened at first at the London School of Hygiene and Tropical Medicine, with a staff lent by the Ministry of Health, to carry out on behalf of the University of London the Government scheme for the postgraduate education of medical officers on release from the Forces. In November a move was made to No. 2, Gordon Square, London, W.C.1. Discussions were continued or newly entered upon with various hospitals in London with a view to establishing postgraduate institutes in the various branches of medicine.

Satisfactory progress was made with the Royal National Throat, Nose and Ear Hospital, the Royal London Ophthalmic Hospital, and the National Hospital, Queen Square. These hospitals have constituted their teaching schools separately from the respective hospitals, under committees of management and academic boards, and are able to provide sufficient accommodation for teaching and research to justify financial aid out of the block grant for their further development as institutes. The Institute of Laryngology and Otology began to receive financial assistance in January of the present year, the Institute of Ophthalmology in March, and the Institute of Neurology in April. The Institute of Child Health has been constituted a central activity of the University and will become a constituent institute of the Federation, as also will the British Postgraduate Medical School. St. John's Hospital for Diseases of the Skin has entered into negotiations with University College Hospital Medical School for facilities for teaching and research, so that an Institute of Dermatology may be expected to be a constituent institute of the Federation during the next academic year. Preliminary discussions have been held with the Brompton Hospital, the Heart Hospital, St. Peter's Hospital for Urinary Diseases, and the National Orthopaedic Hospital, though lack of accommodation for teaching and research makes it unlikely that specialist institutes can be formed during the next year.

It has been decided to petition for a Royal Charter for the Federation and a supplemental charter for the existing British Postgraduate Medical School. The new specialist institutes will be separately incorporated under the Companies Act.

For the training of specialists, to meet the demands of graduates coming to London, it is proposed to create "registrarships for specialist trainees" at the British Postgraduate Medical School and the special hospitals mentioned. One difficulty is that graduates may come to London at different stages in their postgraduate training, and as their capabilities and experience will be unknown to the hospital authorities they may not be able immediately to obtain suitable hospital appointments. It is proposed to provide training, including clinical experience, for such graduates, but without responsibility for the care of patients, so that it will be possible for their suitability for responsible appointments to be tested and for them to obtain such posts as vacancies occur. This would also meet the needs of those who visit London for shorter periods and do not require full specialist training. These courses of training are provided at the British Postgraduate Medical School, the Institutes of Child Health, Neurology, Laryngology and Otology, and Ophthalmology, and at Maudsley Hospital, but augmented or extended accommodation is needed. Another desirable innovation is a revision course in advanced general medicine or general surgery suitable for the specialist who has had sufficient practical experience but requires a short period of academic instruction to complete his training or to obtain a higher degree or diploma. It is also hoped to provide travelling fellowships open to graduates undergoing specialist training at the undergraduate schools as well as at the schools and institutes of the Federation, such fellowships to be held usually in the last year of specialist training.

Postgraduate Education for the General Practitioner

Under the Government scheme for demobilized doctors a series of two weeks' intensive general refresher courses for practitioners was arranged at non-teaching hospitals, voluntary and municipal, in the London area; but it is hoped to go further and to accommodate the provision to special conditions of practice by the following methods:

(1) Clinical assistantships requiring attendance on at least one half-day a week.

(2) Monthly meetings in the hospital for demonstration of cases and discussion.

(3) Whole-time intensive general refresher courses once a year, lasting one week.

(4) Short—perhaps week-end—courses on subjects in which progress of practical importance has recently been made—for example, treatment by penicillin, blood transfusion, etc.

These facilities for general practitioners would be arranged at hospitals other than those occupied with undergraduate teaching or with the training of specialists, but the staffs of teaching hospitals would take part. The experience gained with the courses for demobilized doctors should be of considerable value, especially in selecting suitable hospitals. It is proposed to begin arranging provisions on these lines as soon as there is a lessening of the demands for facilities for demobilized doctors, but some of them will probably not be practicable until the National Health Service is in being.

The British Postgraduate Medical School

The British Postgraduate Medical School (Ducane Road, Hammersmith) has been a school of the University of London since its beginning in 1935. Increasing demands for postgraduate education from the Dominions, Colonies, and foreign countries, sponsored by the Government or the British Council, have made it necessary to expand the clinical facilities at the school, and arrangements were made with the London and Middlesex County Councils for the accommodation of twenty additional graduate students in general medicine and twenty in general surgery from April of this year.

The teaching in the clinical departments consists of bedside teaching, reinforced with lectures, clinico-pathological conferences, radiological and post-mortem demonstrations, and attendance at operations. Clinical teaching is continuous, but organized teaching is arranged in sessions of about fourteen weeks, roughly from September to Christmas, January to April, and April to July. At present there are no vacancies until 1947. House appointments are usually made from among the students, and facilities are provided for senior students who wish to carry out original research under the director.

The department of medicine is organized in five clinical units, three at Hammersmith and two at auxiliary hospitals. About 90 students can be accommodated, and resident appointments are available for about 20. The department of surgery provides training for general surgeons, but instruction in orthopaedics, otolaryngology, and urology is included. Teaching is so organized as to be continued from out-patient departments through the wards and operating theatres to follow-up clinics. Students do not themselves perform operations. There are at present no facilities for work in preparation for the primary F.R.C.S. examination. In the department of obstetrics and gynaecology teaching is conducted in the ante-natal and post-natal clinics and in the sterility clinic as well as in the wards and operating theatres. The department of pathology is organized in four main sections: (1) morbid anatomy and histology, (2) bacteriology, (3) haematology and clinical pathology, and (4) biochemistry. The course lasts for a year and starts in October. There are at present only ten places available in the course. Fortnight courses in practical anaesthetics are also given. In the department of radiology teaching is based on the requirements for the diploma in medical radiology.

The Special Institutes

It remains to glance at the present position in the various institutes whose origin has just been described. The committee of management and academic board of the Institute of Child Health has been constituted. Dr. Alan Moncrieff began his duties as professor in January last, and two assistants have been appointed, one to work mainly at Great Ormond Street Hospital and the institute there and the other mainly at the British Postgraduate Medical School at Hammersmith Hospital in connexion with the department of obstetrics. Negotiations

with certain boroughs for their co-operation in respect of their maternity and child welfare clinics are taking place.

The Institute of Laryngology and Otology has received a grant as from January of this year. A lease of premises in Gray's Inn Road, close to the Royal National Throat, Nose and Ear Hospital, has been obtained. Mr. C. Gill-Carey has been appointed part-time dean, and the teaching is being developed by the staffs of the Royal National and Golden Square Hospitals.

The medical school at the Royal London Ophthalmic Hospital, Moorfields, has been reconstituted, with a separate committee of management and an academic board, as the Institute of Ophthalmology. It has come to an agreement with the Central London Ophthalmic Hospital, and the combined staffs are available for the purposes of the Institute. It is hoped that other ophthalmic hospitals in London will co-operate. Mr. R. C. Davenport has been appointed part-time dean, and arrangements for teaching and research are being planned. The appointment of professor in the year 1946–7 is under consideration.

As for the other institutes, the establishment of the Institute of Neurology is going forward in association with the National Hospital, Queen Square. It is considered that no action is required for the inclusion of Maudsley Hospital as it is already a school of the University, but its inclusion in due course as an Institute of Psychiatry is desirable. A financial grant is being made to the school through the Federation during 1946–7.

In addition to the various hospitals mentioned, arrangements have been made for clinical facilities at one L.C.C. hospital (St. James's) and at two Middlesex C.C. hospitals (Redhill County and North Middlesex) for postgraduate students of the departments of medicine and surgery at the British Postgraduate Medical School, and it is hoped to make similar arrangements with Queen Charlotte's and Chelsea Hospital for Women for the students of the department of obstetrics. It is possible that the West London Hospital may be associated on similar lines. Hospitals under consideration as associated hospitals of the Federation are Brompton, the Heart Hospital, St. Peter's, and the Royal National Orthopaedic.

As already stated, all the universities are making postgraduate arrangements of some kind, although, of course, on a very much smaller scale, except perhaps in Edinburgh. We have already alluded to the plans for postgraduate work which have begun to materialize at Cambridge. Glasgow is undertaking a large amount of postgraduate teaching, and it is intended to enlarge this field. At Liverpool postgraduate research students are being accommodated. Queen's University, Belfast, is developing plans for a postgraduate school. Up to now, in most of the universities, the postgraduate facilities have been concentrated on the administration of the Government scheme for postgraduate training of demobilized medical officers.

The Fellowship of Postgraduate Medicine, founded in 1919, has a bureau at 1, Wimpole Street, London, W.1, which affords general information on postgraduate work in London and elsewhere. It arranges classes at hospitals, also special courses of intensive study for those entering for higher examinations.

Special Courses

The Royal College of Surgeons is embarking on a programme of postgraduate teaching, including the study of the basic sciences. The College has a noteworthy list of lectures in anatomy, physiology, and pathology, and in surgery which will be given in the autumn months, and a similar series is planned for the early part of 1947. Some forty lectures in the first of these series are planned for September and October, including twelve by Prof. R. A. Willis on the study of tumours. These will be followed in October and November by twelve surgery lectures by well-known surgeons.

The impressive contribution to postgraduate knowledge afforded by the lectures at the Royal College of Physicians must not be overlooked in any assessment of facilities. The Croonian, Fitzpatrick, Oliver Sharpey, Milroy, Goulstonian, Lumleian, and other series, to which is now added the Humphry Davy Rolleston lectures, afford opportunities for the presentation of work in medicine such as could scarcely be forthcoming in any other way.

Courses in Public Health and Tropical Medicine

The London School of Hygiene and Tropical Medicine (Keppel Street, W.C.1) furnishes a course for the diploma in public health and for the diploma in tropical medicine and hygiene. During the next session there will also be a course for the academic postgraduate diploma in bacteriology, but there are now no vacancies for this course, and applications for the subsequent session should reach the school by March, 1947, as the number of places is strictly limited. The course for the D.P.H. is designed primarily for qualified medical practitioners who intend to enter the public health service in this country as medical officers of health. The course begins on October 1 and lasts one academic year of nine months. Examination for the certificate in public health is held at the end of three months. All the vacancies for the full course for the diploma have been filled and there is a waiting list. Applications for the course beginning in the autumn of 1947 will be considered early next year. In view of the development and subdivision of medical work in the public health service, some places in the course for the certificate in public health have been reserved for practitioners who intend to engage in public health work other than as medical officers of health.

The course at the London School for the diploma in tropical medicine (D.T.M.&H.Eng.) is designed primarily to prepare qualified medical practitioners for the examination of the Conjoint Board for this diploma. It is open to any qualified medical practitioner, but students not holding a qualification registrable in England should consult the secretary of the Conjoint Board (8, Queen Square, W.C.1) regarding their admissibility to the examination. Two courses will be given during the next session, the first starting on September 30 and the second on March 3. The examinations that conclude these courses will be held in March and July respectively.

The Incorporated Liverpool School of Tropical Medicine is now on a normal peacetime footing, though the staff is not yet up to full strength. The two separate diplomas in tropical medicine and tropical hygiene formerly offered were combined this year to form a single diploma in tropical medicine and hygiene (D.T.M.&H.). Courses of instruction for this diploma are given twice yearly, and each lasts about four months. During 1946–7 these courses will start at the beginning of September and January. They are open to postgraduate students only, of whom about 40 to 50 a term can be accommodated. Women students are accepted on the same terms as men. The address of the school is Pembroke Place, Liverpool.

Many of the university courses for diplomas in public health have been suspended, but some are resumed or on the point of resumption. At Leeds the D.P.H. course will be resumed next session. The Royal Institute of Public Health and Hygiene (28, Portland Place, W.1) arranges courses of lectures and laboratory instruction by qualified teaching staff for the diploma in public health. Students completing the course are entitled to enter for examinations for the D.P.H. of universities and medical corporations of the United Kingdom. Examinations for the certificate and diploma of the Institute are held twice yearly in London and at provincial centres in general and school hygiene and in child welfare.

Postgraduate Education in Psychiatry

The provisional National Council for Mental Health (39, Queen Anne Street, W.1) arranges training courses in child psychiatry and mental deficiency. Fellowships are arranged to enable qualified psychiatrists to obtain special training in child guidance at a recognized training clinic. Preliminary qualifications for award of fellowship are D.P.M. or equivalent experience in the psychoses, psychoneuroses, and mental defect. Fellowships are tenable, as vacancies occur, at the Child Guidance Training Centre, Woodside Hospital, Muswell Hill; the Tavistock Clinic; Maudsley Hospital; Hill End Hospital, St. Albans; and at the Child Guidance Clinics at Aberdeen, Birmingham, Bristol, and Manchester. Ideally the course lasts for 12 months' half-time attendance, but in special circumstances six months' full-time may be arranged. The course is recognized by the Ministry of Education as a

suitable qualification for the medical director of an Education Committee's Child Guidance Clinic, and it is at present the only course of training recognized specifically for this purpose, though it is possible to get equivalent experience by personal arrangement.

At present the provisional National Council arranges two courses a year for school medical officers in mental deficiency, backwardness, and maladjustment. They last for two weeks, but it is likely that as from March next they will be extended to three weeks. They include lectures and demonstrations in mental testing, clinical mental deficiency, child development, and child guidance. They include the duties of medical officers in ascertainment under the Education Act, 1944. The course is recognized by the Ministry of Education. The fee is five guineas. Local education authorities defray the expenses of school medical officers, but the course is open to any qualified medical man or woman.

The Council also runs from time to time short courses of lectures for doctors on various aspects of psychiatry and psychology.

Psychiatry

The Tavistock Clinic (the Institute of Medical Psychology) has lately entered its new home at 2, Beaumont Street, London, W.1, and is contemplating the full resumption of its pre-war activities. For many years it carried out systematized training for doctors in medical psychology. Before the war systematic courses of training were taken, lasting two years, by those wishing to specialize in psychotherapy, and, lasting one year, by general practitioners who wanted to gain a knowledge of psychoneurosis for use in their practice. This work was regularly carried on until the outbreak of war, and postgraduate students of the Clinic are now scattered widely throughout the British Empire and the Dominions. In addition to systematic training short lecture courses and week-end discussion groups were held for doctors, and a wide variety of educational activities for lay groups were undertaken.

The recent creation, with the aid of a Rockefeller grant, of an "Institute of Human Relations" at the Tavistock Clinic has entailed a revision and extension of training facilities. It is intended to offer, beginning in February, 1947, a four months' course in social methods to suitably qualified students, medical and non-medical, affording a basic training in diagnosis and treatment of social problems. It is also intended to offer seminars on certain selected psychological topics, to begin in February. Existing provisions for training suitably qualified physicians in individual adult psychotherapy will be continued, and the first post-war course, which begins in October, is being revised to bring it into line with the new developments.

The Institute of Psycho-Analysis (96, Gloucester Place, London, W.1) provides training in psycho-analytic theory and technique. The course is part-time and lasts about four years. It includes a personal analysis, attendance at lectures and seminars (held in the evenings), and clinical work done under supervision. Students are required to obtain general psychiatric experience at other clinics and hospitals; the Institute does not set out to teach all aspects of psychiatry. Completion of the course to the satisfaction of the training committee qualifies the student for election as an associate member of the British Psycho-Analytic Society. In addition to this main course designed for those intending to specialize, the Institute gives briefer courses from time to time on the application of the principles of psycho-analysis to medical problems. These are advertised in the medical press.

POSTGRADUATE COURSES FOR INSURANCE PRACTITIONERS

Reintroduction Contemplated by Ministry of Health

It was reported to the meeting of the Insurance Acts Committee on Sept. 5 that the Ministry of Health was contemplating the reintroduction of postgraduate courses for insurance practitioners, pending the provision of such facilities under the National Health Service. It will be recalled that such courses were arranged in London and other centres until the outbreak of war caused them to be suspended. The new proposal is dependent on the willingness of the universities to continue during 1947 the courses of postgraduate instruction for demobilized doctors, the demand for which will shortly decline. Ex-Service medical officers who wish to do so will be able to avail themselves of the courses, the arrangements being similar to those at present in operation under which the fees and subsistence expenses will be defrayed from Treasury funds.

The courses contemplated may be of several types, such as a two weeks' intensive course of 22 sessions in general medicine or in some approved specialized subject, a one week's intensive course of 11 sessions, again in general medicine or a specialized subject, or an extended course, such as two afternoons a week for eleven weeks. The syllabus will be subject to the general approval of the Minister. During 1947 a doctor will be allowed to take one two-weeks course or two one-week courses. To be eligible for financial assistance for meeting expenses, which will be paid from National Health Insurance Funds, an insurance practitioner must have at least 300 insured persons on his list if his practice is an urban one, or 150 persons if it is rural, at least three years must have elapsed since his qualification, and he must not have attended any of the courses for demobilized officers. Expenses will be paid as follows: course fee, 7½ gns. for a two-weeks course or 4 gns. for a one-week course; subsistence allowance up to £1 a day, if attendance necessarily entails absence from home at night, or otherwise actual expenses up to 5s. a day, and travelling expenses at third-class monthly return rates. The expenses of providing a locum tenent, where necessary, up to 12 gns. a week will also be met. Originally the Ministry suggested 10 gns. a week for a locum tenent, but later, on representations being made to them by representatives of the Insurance Acts Committee, agreed to raise the fee to 12 gns.

Under these arrangements, which will be without prejudice to future arrangements under the National Health Service proposals, an insurance practitioner will be given freedom of choice of the centres where courses are available. It is understood that the Ministry proposes to send a circular on the subject to every Insurance Committee, with copies to Panel Committees for their information.

When the provisional proposals came before the Insurance Acts Committee they were generally approved subject to certain qualifications. It was pointed out that 12 gns. was below the customary cost of a locum tenent; this cost as a general rule was at least 14 gns., and a Lancashire representative said that it was from 15 gns. to 20 gns. in the north-west. It was agreed to press for an upwards revision of this allowance to 14 gns., and also that first-class fares of the practitioner should be paid. It was further agreed to urge on the Ministry of Health that the 300 and 150 minimum of insured persons on the practitioner's list should not be rigidly adhered to as governing eligibility for the course, and it was pointed out that there might be a partnership in which the insured persons were entered on the list of one partner, but were attended equally by the other. The need for a certain amount of flexibility in this arrangement was expressed.

THE PUBLIC SERVICES

The majority of men and women after qualification and the filling of one or more resident appointments in hospital become general practitioners, usually starting as assistants and presently entering independent or partnership practice. Some, after a course of postgraduate study and obtaining the appropriate degrees or diplomas, become specialists or enter a branch of the public service. Laboratory work and medical research also offer interesting, though not highly paid, opportunities.

In the public health service a wide range of openings is now afforded in the shape of appointments under local authorities; there are also a number of posts of medical officers in Government departments. The senior posts in the public health service are now almost entirely administrative; junior posts may also be administrative, though more frequently they are mainly clinical, perhaps with some administrative responsibility. The effect of National Health Service legislation on the public health service cannot yet be fully estimated, but it seems likely that there will be an increased field for clinical preventive work.

New rules were promulgated by the General Medical Council to operate from Jan. 1, 1946, aiming at a more rational method of training for work in public health departments under modern conditions. The nature of the preliminary and final examinations has been indicated in the section headed "Postgraduate Education."

What was known as the Askwith agreement for many years determined the scales of remuneration in public health appointments, hospital and other, under local authorities. This agreement was terminated on March 31 of this year, and an interim agreement, without prejudice to an eventual settlement when conditions have become more stable, has been arrived at at a conference of the various associations of local authorities with the British Medical Association. Certain percentage increases on the basic "Askwith" rates hitherto in force have been accepted, benefiting more particularly those whose minimum is below £1,000. The new scales were set out in the *Supplement* of July 13 (p. 8).

The largest employer of public health medical officers is the London County Council, with its 76 general and special hospitals and its 21 mental hospitals and institutions for mental defectives. A proposal which the Council is pursuing is to divide London into some twenty districts, each to be served by a general hospital dealing with acute cases, with other hospitals related to it and supplying a complete medical service. In about half these districts the main hospital would be the council hospital and in the others a voluntary teaching hospital. Special units for certain types of medical and surgical treatment would be situated at suitable hospitals. Most of the general hospitals are already recognized training centres for candidates for the University of London M.D. examination, and a number of them for the diploma of Membership of the Royal College of Obstetricians and Gynaecologists and for the final F.R.C.S.

Apart from the London county mental hospitals there are 91 mental hospitals in England and Wales and 23 in Scotland under the control of local authorities, and some 20 in the whole of Great Britain administered by voluntary bodies. Assistant medical officers in mental hospitals are paid in accordance with the scales laid down in the former Askwith agreement, and to these the new interim scales will apply. Mental hospital medical superintendents and their deputies, however, together with some mental specialists, have been outside the agreement, and it is being represented that the new proposals should apply to them also.

Before the war there were about 50 whole-time and part-time medical officers in factories. During the war, owing to the Factories (Medical and Welfare Services) Order, 1940, which may require the owner of a factory at which any Government work is done to appoint doctors, nurses, and welfare supervisors, there was perhaps a twenty-fold increase in the number of industrial medical officers, and it is expected that many of these posts will become permanent. A very large proportion of factory workers, however, work in places too small to employ a whole-time medical officer. Something is being done in the way of grouping small factories for this purpose, and also in the employment of part-time factory doctors. The Association of Industrial Medical Officers (London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1) looks after the interests of these officers, and the British Medical Association publishes the *British Journal of Industrial Medicine*.

H.M. Forces offer openings for medical officers. Before the war candidates, who were normally required to be under 28 years of age, were accepted on a short service commission basis for a period of three to five years. At the end of their short service period they had an option of being considered for a permanent commission or of retiring with gratuity. The scheme for short service commissions is at present suspended, and all applications are dealt with by the Central Medical War Committee at B.M.A. House, London, or in Scotland by the Scottish Central Medical War Committee at 7, Drumsheugh Gardens, Edinburgh, 3.

The method of recruitment to the Indian Medical Service was altered during the war, and those wishing to be appointed are required first to join the R.A.M.C. After a course of instruction they are able to be posted to the Indian establishment and are then given the opportunity to transfer to the I.M.S. Full information regarding appointments may be obtained from the Secretary, Military Department, India Office, Central Buildings, Matthew Parker Street, S.W.1.

The Colonial Medical Service offers many posts for men and women doctors. A candidate's preference for any particular colony is given full consideration, though it may not always be possible to meet his wishes. Vacancies occur most often in the larger medical departments in tropical Africa. Generally speaking, the initial salary is from £600 to £700 on a scale rising to £1,000 or £1,120 per annum, but there are a number of higher scale posts, both administrative and specialist, with salaries up to £2,000. Government quarters are provided, together with first-class passage to and from the territory. Officers in this Service have special opportunities in preventive medicine. Inquiries should be addressed to the Director of Recruitment, Colonial Office, 15, Victoria Street, London, S.W.1. A Colonial Medical Research Service is being formed.

Those who wish to put into the hands of a young man or woman a succinct and authoritative statement of the qualifications, training, and prospects of employment will find it in a threepenny booklet prepared by the Ministry of Labour and National Service, in the "Careers for Men and Women" series, No. 32, *Medicine and Surgery*. It is obtainable at H.M. Stationery Office.

HIGHER QUALIFICATIONS

Diploma in Public Health

The Diploma in Public Health, granted jointly by the two Royal Colleges (D.P.H., R.C.P.Lond. and R.C.S.Eng.) is open, after a stipulated interval, to those who have passed a recognized final qualifying examination in medicine, surgery, and midwifery. For admissibility to the preliminary examination the curriculum of study must extend over one academic year whole-time or not less than eighteen calendar months part-time. Both the preliminary and final examinations are normally conducted twice yearly—in June and December—and candidates must give notice to the Secretary of the Examining Board in England, Examination Hall, Queen Square, London, W.C.1, twenty-one days before the examination begins, and must furnish the necessary certificates.

The preliminary course consists of systematic instruction in the history of public health and public assistance, the functions of central and local authorities, social security, the statistical presentation of public health data, the causal agents of infection and their control, the influence on health of heredity and of environment, physical education, and the principles of education. The course must include practical demonstrations, exercises in epidemiological problems, and visits to places and institutions of importance to public health. The examination consists of two written papers and an oral session.

Those who pass this examination receive the "Certificate in Public Health" of the R.C.P.Lond. and R.C.S.Eng., and the possession of this certificate makes them eligible to begin the course of study required for admission to the final examination. The final course includes systematic instruction in a large number of subjects such as physiology, biochemistry, food, and nutrition in relation to public health; bacteriology, parasitology, and medical entomology, as applied to epidemiology; mass aspects of disease; sanitation; statistical methods and data; the law relating to public health; mental health services; and occupational health. Candidates are required to produce a certificate of having resided and received instruction for four weeks in an infectious diseases hospital or of having regularly attended at such a hospital for three months, also of having for not less than five months attended the health department of a local authority and personally studied the daily work of each section of such department under proper guidance. The examination consists of three written papers, a clinical examination in infectious diseases, an oral examination in that subject and in epidemiology and general and special hospital administration, and a general oral examination. The whole examination must be passed at one time. Candidates who pass the examination are then granted the diploma.

D.P.H. courses are being resumed at the Universities of Liverpool, Leeds, the Welsh National School of Medicine, and a number of others after suspension during the war.

Diploma in Industrial Health

The first examination for the Diploma in Industrial Health (D.I.H., R.C.P.Lond. and R.C.S.Eng.) will be conducted in December, 1946, Part I beginning on Dec. 13 and Part II on Dec. 27. Candidates are admissible to Part I 24 months after having passed a qualifying examination in medicine, surgery, and midwifery. The candidate is required to produce a certificate of regular attendance at a course extending over one academic term of not less than ten weeks of whole-time study or an equivalent period extending over not less than five months of part-time study, covering in either case not less than 300 hours. The systematic and practical instruction required is the same as for Part I of the examination for the D.P.H.

For Part II the candidate is required to have attended regularly at a recognized institution subsequent to having passed Part I, a course extending over not less than five calendar months of whole-time study or an equivalent period extending over not less than twelve calendar months of part-time study, covering in either case not less than 550 hours. Systematic instruction is required in the structure of industry and industrial relations, the development of industrial health and legislation relating thereto, the organization of a health service in industry, applied physiology in industry including mines, industrial psychology, placement of workers, industrial accidents and occupational diseases, rehabilitation and resettlement in industry, and special problems relating to employment of women and young persons. The practical instruction must include visits to industrial establishments, docks, shipyards, and mines, attendance at a skin and an ophthalmic clinic for 12 and for 6 sessions respectively, attendance at an accident department of a hospital for 12 sessions, six visits to recognized rehabilitation and retraining centres, and attendance at various works' surgeries and works under the instruction and supervision of industrial medical officers.

Each part of the examination consists of two written papers of three hours each and an oral examination, and for Part II a clinical examination also is required. Further particulars can be obtained from the Secretary of the Examining Board, Queen Square, London, W.C.1.

The Society of Apothecaries of London (Apothecaries Hall, Blackfriars Lane, E.C.4) has instituted an examination for the diploma in industrial health, embracing the history and legislation relating to industrial health, occupational diseases, the industrial environment, the practice of industrial medicine, and clinical medicine and surgery as applied to industry. The examinations are held in February, May, August, and November.

Other Special Degrees and Diplomas

The Examining Board in England (English "Conjoint") offers diplomas in laryngology and otology, ophthalmic medicine and surgery, anaesthetics, child health, physical medicine, medical radiotherapy, medical radio-diagnosis, psychological medicine, and tropical medicine and hygiene.

The Society of Apothecaries of London grants the Mastery of Midwifery (M.M.S.A.) upon examination in obstetrics, paediatrics, and public health. The examinations are held in May and November. The Royal College of Obstetricians and Gynaecologists grants a diploma to practitioners who have had special postgraduate experience in obstetrics.

Several of the universities normally offer diplomas in psychological medicine, but in some of them the course is still suspended. A D.P.M. course is normally held at Maudsley Hospital (L.C.C.) in the early months of the year.

The Faculty of Radiologists (Warden, care of Royal College of Surgeons, Lincoln's Inn Fields, W.C.2) grants a Fellowship to medical graduates of five years' standing who have spent at least one year in general clinical work at an approved hospital, have practised radiology exclusively for three years, and have held a radiological diploma for at least two years. The Universities of London and Edinburgh grant diplomas in medical radiology.

The University of Oxford grants a diploma in ophthalmology. University College, Dublin, offers a diploma in child health. Diplomas in bacteriology are ordinarily granted by the Universities of London and Manchester; the University of London offers a diploma in clinical pathology, and Liverpool University the degree of Master of Surgical Orthopaedics. The Irish Conjoint Board issues diplomas in ophthalmology, anaesthetics, child health, and psychological medicine.

The Royal College of Surgeons of England is making application for a supplemental charter to enable (1) the F.R.C.S. to be obtained by ophthalmological candidates who pass the normal primary examination and a special final examination equal in standard and similar in form to the ordinary examination, and (2) to have power to grant a higher dental diploma entitled the "Fellowship in Dental Surgery."

TUITION AND EXAMINATION FEES

The fees charged at medical schools vary to a considerable extent as between one school and another, but the estimated average cost of training over six years, including books and instruments, is placed at between £320 and £360. To take a typical school—Charing Cross—£340 is mentioned as the total cost to qualification, provided the course is continuous and the examinations are passed at the normal times. This estimate covers the first M.B. in the case of degree students and the pre-medical examination in the case of students reading for the Conjoint diploma. The entrance fee is 10 gns., the tuition fees for the first M.B. are £40 per annum and for the second M.B. £44 per annum, and for the clinical courses there is a composition fee of 38 gns. The composition fee does not include the fee for the course in fevers and infectious diseases (3 gns.), the fee of 1½ gns. paid to the public vaccinator, and the sum of £5 per month which midwifery clerks, during their residence in hospital, are required to pay towards the cost of their board.

The examination fees for the University of London M.B., B.S. total 33 gns., and for the Conjoint Board 46 gns. The latter fee is made up of 6 gns. for the pre-medical examination, 8 gns. for Part I of the first examination and 2 gns. for Part II, and, for the final examination, 4 gns. for Part I, 10 gns. each for Parts II and III, and 6 gns. for Part IV. For admission to re-examination the fees are reduced, the fee for the final examination being 20 gns., as compared with 30 gns., for the first admission. The examination fee for the L.R.C.P., L.R.C.S.Ed., L.R.F.P.S.Glas. is £33, and the licentiate fee L.M.S.S.A. 25 gns. The fees for university degree examinations vary between £20 and £40. The qualifying degrees of the universities are the following: the B.M., B.Ch. of Oxford, the M.B., B.Chir. of Cambridge, the M.B., B.S. of Durham and London, the M.B., Ch.B. of the Victoria University of Manchester and of the universities of Birmingham, Liverpool, Leeds, Sheffield, Bristol, Edinburgh, Aberdeen, Glasgow, and St. Andrews, and the M.B., B.Ch. of Wales, Queen's University of Belfast, Dublin, and the National University of Ireland.

To the fees for tuition and examination given above the cost of maintenance must of course be added. Some investigations made at Newcastle recently showed that the total cost of six years' studentship worked out at £1,070 if the student lived at home and £1,380 if he was in lodgings; but there is a great difference in these costs as between London and the provinces, and between the provinces and Scotland. At Oxford the cost, in 1945, of the residential part of the course was about £250 per annum; this has risen slightly since that time as tuition fees have been increased.

Further fees for tuition and examination will of course be required if it is decided to proceed to higher degrees or diplomas. The fee to be paid before examination for Membership of the Royal College of Physicians of London is 10 gns., but this is reckoned as part of the fee for admission as a Member in the event of the candidate satisfying the censors' board of his competence. Before admission as a Member the fee to be paid is 40 gns., except when the candidate for Membership is already a licentiate of the College, when the fee already paid for the licence (15 gns.) is deducted from the larger amount. For the Fellowship of the Royal College of Surgeons the fee payable for admission to the primary examination is 8 gns. and to the final 15 gns., and the fees payable before the diploma can be granted, in addition to the fees for admission to the examinations, are 10 gns. for members of the College and 30 gns. for all other candidates. The fee paid by the candidate for the Membership examination of the Royal College of Physicians of Edinburgh is 35 gns., and when the Member is

raised to the rank of Fellow he is required to pay 38 gns., exclusive of stamp duty. The stamp duty on the Fellowship, payable to the Government, is £25.

The fee for admission to the examination for the D.P.H. by the Examining Board in England (the "Conjoint") is 6 gns. for the preliminary examination and 6 gns. for the final, and there is a diploma fee of 5 gns. The fee for admission for the D.T.M.&H. is 10 gns. At the Liverpool School of Tropical Medicine the fees for the course of instruction for the diploma are 30 gns., and for the revision course 22½ gns. For admission to the university examination the fee is 6 gns. and the fee for the diploma 3 gns. At the London School of Hygiene and Tropical Medicine the tuition fee is £40 for the D.T.M.&H., and £56 14s. for the D.P.H.

The young student should inquire concerning the numerous public secondary school scholarships and State scholarships which are available from school to university. A number of scholarships, exhibitions, and prizes are awarded directly by medical schools. The combined hospital university entrance scholarships are awarded every year to second and third-year students who have passed the intermediate examination in anatomy and physiology of a British university outside the London area. The arrangement covers three schools—St. Bartholomew's, Guy's, and St. Thomas's. The Royal College of Surgeons awards the Macloghlin scholarships to young men seeking to qualify themselves as members of the Royal College and who need financial assistance for the prosecution of their studies. The examination is competitive, and no scholarship is awarded to any candidate who does not obtain pass marks in all three subjects of the pre-medical examination—chemistry, physics, and biology. The scholarship may be tenable for five years and is of the value of £90 a year. Another prize of the Royal College is the Begley prize awarded to the candidate obtaining the highest number of marks in anatomy and physiology combined.

ON QUALIFICATION

At innumerable gatherings of final-year students and the newly qualified the advice is given to do two things on qualification: (1) to join the British Medical Association, and (2) to join a defence society.

The British Medical Association

The British Medical Association, with which the Canadian Medical Association is affiliated and the Medical Association of South Africa is shortly to be affiliated, has a membership of over 52,500. Medical practitioners are elected to membership by the Council of the Branch in the area in which they reside, or, if not resident within the area of a Branch (e.g., serving with H.M. Forces), by the Council of the Association. The ordinary subscription for members resident in Great Britain and Northern Ireland is 3 gns., but there are remissions of part of the subscription in certain cases and newly qualified practitioners admitted to membership within the first two years of their registration pay only 1½ gns. until the end of their fourth year. For members not resident in Great Britain and Northern Ireland the subscription is ordinarily 1½ gns., and for medical officers serving with the Forces (apart from the above concession to newly qualified practitioners) the subscription is 2 gns. Forms of application are obtainable from the Hon. Secretary of the Division or Branch or from the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The privileges of a member include participation in all the activities of the Association, local and central, the receipt weekly of the *British Medical Journal* and its *Supplement*, participation in the government of the Association and in the formulation of its policy, the use of the houses of the Association, with, at the London house, library and common room, and the advice and help of the central staff in professional matters. The Scottish House of the Association is at 7, Drumsheugh Gardens, Edinburgh, 3.

The Defence Societies

The London and Counties Medical Protection Society (Victory House, Leicester Square, W.C.2) has a membership of 22,000 and financial resources amounting to £143,000. During 1945 it received over 1,000 applications for advice and assistance. Practitioners returning to civil life on release from the Forces have found it very advantageous to consult the Society.

The Medical Defence Union, which has recently celebrated its diamond jubilee, has 29,800 members, and has also undertaken much useful medico-legal work on behalf of its members. The cases which come into court are, of course, only a small fraction of those with which a defence organization is daily called upon to deal.

In Scotland the Medical and Dental Defence Union (113, St. Vincent's Street, Glasgow, C.2) has a membership of between 4,000 and 5,000. A standing joint committee with representatives of all three societies has been set up. It is an advisory body and recommends to the respective councils lines of action to be followed in appropriate cases.

BRITISH MEDICAL STUDENTS ASSOCIATION

The British Medical Students Association was established a few years ago with the active encouragement of the British Medical Association, which continues to afford it secretarial assistance and hospitality at B.M.A. House. It is the only body through which the medical students of this country can speak with a united voice on the subject of their future. Nearly all the British medical schools are members of the Association. Irish medical students have their own Association, but this is linked with the B.M.S.A., and observers from Irish schools attend its annual congresses. Some highly successful congresses have been held in London and have been addressed by Ministers of Health and others. The B.M.S.A. has been fortunate in its able leaders, though it is unfortunate in the fact that attainment of qualification so quickly sweeps them out of undergraduate life. On the other hand, there is no bashfulness on the part of first-year men, and there is a refreshing spirit of criticism among the rank and file.

The B.M.S.A. has endeavoured to elicit the opinion of students on many issues appertaining both to undergraduate and qualified status. One representative of the Students Association—a woman—serves on the B.M.A. Curriculum Committee now sitting. At no time has the Students Association gone deeply into the details of the curriculum, though quite a number of student bodies at the individual schools have done so. The Government's Health Service Bill has been the subject of a questionary with a view to collecting and summarizing student opinion on the subject. Schools have been asked to arrange meetings for discussion of the Government proposals and regional meetings have also been called. It should perhaps be stated that the B.M.S.A. keeps itself quite clear from any form of party political activity.

The Cost of Medical Education

The B.M.S.A. is collecting material on the cost of medical education and the extent to which financial help is available by means of scholarships, grants, or loans. Recent increases in student fees, especially at Oxford, have drawn attention to the fact that many colleges, in order to meet increased costs, are obliged to seek an increased income. The National Union of Students committee at Oxford has drawn up a detailed statement of the position, and on the basis of its conclusions the Union has formulated a three-point policy: (1) that where universities or colleges cannot meet increased costs the resultant deficit in their budgets should be made up by direct Treasury grants to the University concerned through the University Grants Committee, and not by an increase in the fees charged to students; (2) that there is a need for an increase in the number and amount of grants to students, but that such increases should be made in order to supplement the net income of the student and not merely to enable him to pay increased fees; (3) that in the case of Oxford University, where colleges have already increased fees or have announced increases, and of any other university where similar increases are foreshadowed, increased grants should be made and fees for students restored to at least the 1939 figure. The B.M.S.A. has sought the opinion of its members on this policy.

One important piece of work has been in connexion with medical films, and the B.M.S.A., in the absence of a more ambitious work of the kind, prepared a film catalogue. A questionary on the subject of medical films has been circulated. Many branches of the B.M.S.A. have appointed a film secretary, and have pressed their schools for the more general use of teaching films and sound projectors. The question of student health has occupied a good deal of attention, together with the parallel question of nutrition. College canteens are frequently only in the "C" category for the supply of rationed foods, and, in London schools particularly, the provision of the midday meal for students is a serious problem.

Much thought has been given to the question of student exchange as between home and foreign universities, and also as between medical schools and hospitals in this country. Student-staff committees have also been formed, enabling the students to put forward their views and proposals to the governing bodies. Finally, the B.M.S.A. has produced a journal, the first ordinary issue of which appears in the autumn.

THE INSURANCE CAPITATION FEE

FAILURE TO APPLY SPENS REPORT

PANEL CONFERENCE TO BE RECOMMENDED TO CALL FOR RESIGNATIONS

The following recommendation, which has been sent to all Panel Committees with a view to its endorsement for submission to the Panel Conference to be held in London on Oct. 24, was passed unanimously at a meeting of the Insurance Acts Committee (Dr. E. A. Gregg presiding) on Sept. 5:

That in view of the Minister's failure properly to apply the report of the Spens Committee to the current capitation fee—despite explicit Government promises that this would be done—and in view of the grave inadequacy of 12s. 6d. as remuneration for assuming medical responsibility for an insured person for a year, it is recommended to all insurance practitioners in England and Wales, Scotland, and Northern Ireland to place their resignations from the National Health Insurance Service in the hands of the Insurance Acts Committee, and to authorize that Committee, at its discretion, to put in such resignations to Insurance Committees unless the Minister is willing fully to apply the Spens Report to the current capitation fee, with effect at least from Jan. 1, 1946, or, failing agreement, to refer to the Spens Committee or a representative section of that Committee, or other agreed independent body, the question of the interpretation of the Spens Committee Report in relation to the current capitation fee, both parties agreeing in advance to accept the findings.

The adoption of this recommendation came at the end of a three hours' discussion on the impasse created by the refusal of the Ministry of Health to give full effect to the findings of the Spens Report in so far as the present remuneration of insurance practitioners is concerned. At the previous meeting of the Insurance Acts Committee, reported in the *Supplement* of July 27 (p. 32), the earlier stages of this controversy were fully set out. At that meeting it was announced that the Minister had offered a two shillings' increase in the capitation fee, making it 12s. 6d., with retrospective effect to Jan. 1. The Spens Committee found that the remuneration of doctors in general in 1939 was up to £200 (on average £170) below what it should have been, and the contention of the Insurance Acts Committee was that this deficiency should be considered wholly or almost wholly in relation to the part of income derived from insurance practice, because in relation to his private fees the doctor was in a position of control, whereas his insurance income was based on a rate which he could not adjust. Taking the pre-war capitation fee of 9s., which was generally considered to be much too low, this addition would have brought it up, on pre-war standards, to between 12s. and 13s., and if to this a betterment factor of 22% was added to meet the change in values since 1939, it indicated a capitation fee of about 15s. The Committee, therefore, while welcoming the Minister's acceptance of the Spens Report, considered the proposed increase to 12s. 6d. as "gravely inadequate," and suggested that if the Minister was unwilling to make the interim fee 15s. the Spens Committee itself should be asked to state the implications of its findings in relation specifically to the current remuneration of insurance practitioners.

The reply of the Minister was now reported. In the Minister's view it was impossible to consider separately the remuneration of insurance practitioners at present and the remuneration of general practitioners in the future National Health Service. Unless the two were discussed together he saw no useful purpose in a further meeting with the Insurance Acts Committee. On July 30 a further letter was sent to the Ministry giving chapter and verse for the claim that one of the objects in establishing the Spens Committee was to give effect to the undertaking of the then Minister (Mr. Ernest Brown) to have the subject of insurance practitioners' remuneration approached anew, in Mr. Brown's phrase, "from the ground up."

Your letter (the reply of the I.A.C. continued) goes on to repeat the argument that it is impossible to consider separately the question of future remuneration under a Bill which is not yet law, and that of the remuneration of insurance practitioners to-day. The Committee cannot accept this view. On a number of occasions it has been made plain to the Minister and his officers that the representatives of the profession have, as yet, no authority to discuss the mode and amount of remuneration in any new service which may be established. . . . The Committee is quite unable to appreciate why the Minister maintains that the question of remuneration in the new service and that of the current capitation fee must necessarily be considered together."

The correspondence was closed with a further letter from the Ministry stating that the Minister felt that the probability that the new health service would be in operation in the reasonably near future produced a situation in which it was obviously right to consider the whole question of present and future remuneration as a single issue now, in the light of the Spens Report, and that all the Minister could do in the circumstances was to give effect to his undertaking to increase the existing capitation fee to 12s. 6d., retrospectively to Jan. 1, 1946, and this was done by a circular letter to Insurance Committees on Aug. 19.

A Critical Issue

In opening the debate in the Insurance Acts Committee on Sept. 5 Dr. R. W. COCKSHUT said that this was a critical issue. Insurance practitioners would be right to take their stand on the principle that they wished their remuneration to be settled by the tribunal—the Spens Committee—to the setting up of which both sides had consented. If there was any dubiety as to the relation of the findings of the Spens Committee to insurance remuneration it was the Spens Committee itself which should be asked to resolve it. He hoped that the necessary steps would be taken forthwith to obtain from the insurance practitioners of the country the necessary three months' notice to terminate their agreements. Here for the first time in its dealings with the Minister the profession had the opportunity of taking the initiative; hitherto the Minister had had it all in his own hands.

Dr. GREGG from the Chair reminded the Committee of the previous occasion when a similar conflict arose. This was in 1923 when the Minister of Health, the late Lord Brentford (then Sir William Joynson-Hicks), made an offer of a capitation fee of 8s. 6d. for three years or 8s. for five years. This offer was rejected by the Insurance Acts Committee of the time, and a request was made for arbitration, which was refused. The resignations of insurance practitioners were called for, and these were forthcoming in the extraordinary proportion of 95%. An arbitration court was then set up, before which the late Sir Henry Brackenbury presented the case with the skill of a trained advocate, and the award of the court was 9s.

Dr. J. A. PRIDHAM said that on this question the profession had been treated with contempt. It had been promised an investigation "from the ground up," the proposal to set up the Spens Committee was first announced by the Ministry to the Insurance Acts Committee, the Spens Committee was the obvious fulfilment of the promise given, the present Minister continued that Committee when he came into office, he had accepted its findings, but he now refused to apply them unless the profession consented to negotiate with him on something which had nothing to do with the present issue at all.

Remarks of similar tenor were made by Dr. W. D. STEEL, Dr. J. C. PEARCE, Dr. W. V. HOWELLS, Dr. KATE HARROWER, and other members.

The CHAIRMAN OF COUNCIL (Dr. Dain), who was asked for his view, said that he was in entire accord with these expressions. He agreed that this question would have an enormous effect on the voting in the forthcoming plebiscite, but he reminded the Committee of one point which it was necessary to bear in mind in dealing with their "weaker brethren" in the constituencies—namely, that insurance practitioners would receive with their next quarterly cheques an addition to the usual amount, and in the eyes of some this might obscure the principle involved. It was necessary to state quite definitely that such an addition must not be interpreted as an acceptance by the profession of the Ministry's view that 12s. 6d. was the appropriate fee. With regard to the previous arbitration the circumstances of which had been recalled, he thought that this time there would be less difficulty in collecting an overwhelming number of resignations than there was in 1923, because at that time there was some indecision and divided counsel among the leaders, nothing of which now obtained.

A Unanimous Conclusion

Dr. A. BEAUCHAMP said that the Minister had not made out any case for tying up the remuneration under the future

National Health Service and the current capitation fee. The nexus was simply in the Minister's own mind.

Dr. S. WAND agreed that this was the proper time and the proper ground for a trial of strength with the Ministry, but he wondered whether it was the right course to suggest any further resort to arbitration. To his mind the arbitration had already taken place, and the result had appeared in the report of the Spens Committee. The profession had been let down by the refusal of the Minister to give effect to that report. Dr. HOWIE WOOD expressed the same view. He considered that it would be a great mistake to ask for further arbitration. Similar views, questioning the necessity for any further arbitration, were put forward by Dr. A. CAMPBELL, Dr. LEWIS LILLEY, Dr. J. A. IRELAND, and other members.

The CHAIRMAN invited every member of the Committee to express his views and, as far as he could, the opinion prevailing in his locality, and every member did so.

Dr. J. A. BROWN (Chairman of the Panel Conference) said that it seemed clear that there had to be a fight with the Minister at some time or other, and it seemed to him that the present was the time. If this were allowed to slip by and the fight reserved for the wider issue on the working of the new Act so many other considerations would come in and so many controversial facets would be presented that they might lend themselves to the accusation of trying to fight on one issue in order to secure a decision on another. It was much better to fight now on the simple issue presented. Dr. C. F. R. KILLICK, speaking for the West Country, said that he was sure that if a stand were taken on this issue it would be of enormous advantage in the further struggle ahead. Dr. TALBOT ROGERS said that in Kent they spoke with one mind on this subject. Their only criticism was that the sum of 15s. should have been mentioned in the earlier resolution; in their view the amount should have been larger. Dr. F. M. ROSE said that he was in full agreement with all that had been said, but he thought from some knowledge of Lancashire that a good deal of staff work would be needed if those practitioners who medico-politically were apathetic were to be seized of the situation. Dr. S. A. FORBES said that in his part of Surrey he was confident that there would be full support for the policy of handing in resignations. Dr. F. GRAY, in speaking in full support of the action proposed, said that he thought some members were laying too much stress on the political complexion of the present Minister and too little on the habit and tradition of the department. This sort of thing had been part and parcel of the policy of the Ministry for many years before the advent of the present Government. Dr. D. J. B. WILSON said that he had no doubt about the response in his own county of Buckinghamshire, but there might well be a certain "tail" of practitioners who were imperfectly acquainted with the situation, and some canvassing would be necessary.

The Scottish representatives spoke in full support of the policy of the Committee, as did representatives from Yorkshire, Merseyside, Middlesex, and other areas. After all had spoken the CHAIRMAN said that it was evidently the unanimous feeling of the Committee that a communication should at once go out to Panel Committees urging that a stand be made on this issue.

The resolution set out at the beginning of this report was then submitted. The principal discussion took place on the proposal, should the Minister be unwilling to apply fully the Spens report to the current fee, to refer the matter back to the Spens Committee or to some other independent body. It was pointed out that there might be difficulty in reassembling the Spens Committee, and that Sir Will Spens himself was now engaged on another big task concerned with the remuneration of dentists. A motion to delete the words "or other independent body" was lost, but eventually it was agreed to put in all three alternatives—the Spens Committee itself, a representative section of it, or an agreed independent body. In this form the recommendation was unanimously adopted.

It was agreed that the recommendation be sent forthwith to the secretaries of Panel Committees, who should be requested to call meetings of insurance practitioners in their areas, also that it should be circulated as soon as possible, with an explanatory memorandum, to every insurance practitioner, and that the memorandum should make it plain that the increase to 12s. 6d. now current had not been accepted as satisfying the demands of the profession.

The date of the Panel Conference, at which this recommendation will be the outstanding business, was fixed for Oct. 24, and it was stated that the Conference might be expected to go into a second day.

NOTE ON THE CAPITATION FEE

At no time since the inception of National Health Insurance has the capitation fee been regarded by insurance practitioners as adequate payment for the work done and the responsibility involved. In 1913 the capitation fee, including a share of the so-called "floating sixpence," was 7s. 3d. After modest increases in 1918 and 1919 it reached a level of 11s. in 1920 and 1921. In the following year it began a downward journey, reaching its lowest level in the economy years of 1931–4, at 8s. 1½d. At the outbreak of war it stood at 9s., the level determined by a Court of Inquiry the findings of which—and the evidence of the Ministry to which—caused grave dissatisfaction to insurance practitioners. In 1942 there was added an additional 9d. to cover increased practice expenses and to include an undetermined amount in respect of the inclusion of non-manual workers with incomes up to £420 per annum. In December, 1943, there was added a further 9d., "calculated with regard to the war bonus given to those in the Civil Service and others, but not strictly or rigidly calculated."

Put briefly, the 7s. 3d. of 1913 had become 9s. by 1939 and 10s. 6d. by 1946. During the years 1913–46 the average number of items of service rendered to insured persons increased threefold and the cost of living rose by 105%.

It was believed that a new phase had been reached when Mr. Ernest Brown, then Minister of Health, undertook, in response to representations by the Insurance Acts Committee, that when the war was over the whole question of the capitation fee would be investigated "from the ground up."

In May, 1944, the Ministry of Health put forward a proposal which it was stated would satisfy the promise given by Mr. Ernest Brown as well as prepare the way, in one respect, for some form of national health service. This was the proposal of the appointment of the Spens Committee to report on the appropriate range of general practitioner remuneration. As Sir John Maude stated in his letter to the Association of May 17, 1944:

> It seems to the Minister that what is required is to approach the whole subject afresh and with a clear field, and in co-operation with the profession to set on foot an inquiry by a small independent committee which would arrive at useful general standards, on which future arrangements between the profession and the Minister could be confidently founded. Such a course was, you will remember, also contemplated by Mr. Ernest Brown when he gave an assurance last year that the whole question of the basic capitation fees should be re-examined "from the ground up" as soon as opportunity offered.

Sir John further stated that the results of the proposed inquiry into general practitioner remuneration "would be equally valuable and usable no matter what forms of public medical practice may continue or may come into being, under the present law or under any future legislation."

In a further letter of July 10 Sir John Maude stated that the findings of the proposed Committee would apply:

> Irrespective of the institution of any National Health Service and would directly bear upon existing conditions in the present National Health Insurance scheme. The object would be, irrespective of any particular form of national service, to approach the whole subject of public remuneration of the general practitioner with an open mind and a clear field—to give effect, indeed, to the assurance given by Mr. Ernest Brown last year that the whole question of public remuneration of the general practitioner should be approached anew "from the ground up."

In the light of these promises the profession agreed to co-operate in the establishment of the Spens Committee on general practitioner remuneration. In May, 1946, the report of this Committee was issued, and without delay the profession accepted the report. The Insurance Acts Committee met the Minister of Health to ask that, in accordance with the promises given to the Committee, the report of the Spens Committee

should be applied to "existing conditions in the present National Health Insurance scheme." In reply, the Minister stated that he could not consider the Spens Committee report in relation to the current capitation fee without first considering it in relation to remuneration in the proposed new service. In effect, he was prepared to discuss current remuneration only after discussing remuneration in a service not yet established by law and not yet approved by the profession. Such a course would necessarily involve discussing future methods as well as amounts of remuneration, including the salary method.

The Insurance Acts Committee resisted the Minister's argument, maintaining that the course he proposed was neither necessary nor desirable. Insurance practitioners had received explicit Government promises that the report of the Spens Committee could be and would be applied to the National Health Insurance service, irrespective of proposals and decisions for any future service. The Insurance Acts Committee was authorized to discuss only current insurance remuneration. Questions of remuneration for the new service would be dealt with by the Negotiating Committee if and when it had been so authorized by the profession. The Committee demonstrated to the Minister that the Spens Committee's conclusion that pre-war general practitioner remuneration was insufficient by an amount averaging £170 a year could, without further delay, be translated into an increase in the capitation fee. The Minister replied that, while he was willing to discuss the application of the Spens recommendations, which he accepted, both to the new health service and to the current health insurance scheme considered together, he was unwilling forthwith to apply the Spens recommendations to current insurance remuneration. Without applying the Spens recommendations the Minister proceeded to raise the capitation fee to 12s. 6d. retrospective to Jan. 1, 1946.

Bearing in mind the range and character and responsibility borne by insurance practitioners, and the economic conditions in the post-war world, the Insurance Acts Committee regards a capitation fee of 12s. 6d. as gravely inadequate. In its view the application of the findings of the Spens Committee to current remuneration would eventually mean a capitation fee which is considerably higher than 12s. 6d. It had accepted the Government's promise that, quite apart from any new service, the Spens Committee report would be applied to the current capitation fee, and it has asked repeatedly that this should be done. It was willing that the Spens Committee itself should be asked what is the appropriate interpretation of its report in relation to the current capitation fee.

All these considerations have led the Insurance Acts Committee to submit to Panel Committees the recommendation set out below, with a view to its consideration at the forthcoming Panel Conference. Panel Committees will consult individual insurance practitioners at meetings to be called for this purpose and instruct representatives to the Panel Conference. It will be observed that the resolution asks not for any specific sum but for the fulfilment of the official promises, first, that as soon as the war was over the capitation fee would be examined "from the ground up," and secondly that the Spens Committee would undertake that investigation and that its report would be applied to the current capitation fee quite independently of its application to any future service.

The recommendation which the Insurance Acts Committee has submitted for the consideration of Panel Committees and the Conference is given in the second paragraph on page 395.

ROYAL ARMY MEDICAL COLLEGE

The Royal Army Medical College is a postgraduate Service Training Institution normally confined to the teaching of officers already commissioned in the Royal Army Medical Corps and the Indian Medical Service.

Senior Officers' Course

The Senior Officers' Course, held twice yearly, is divided into three separate parts. The first part is devoted to the study of tropical medicine and entomology, military surgery, pathology, military hygiene, and psychiatry, and is spread over a period of approximately three months. Practical instruction and demonstrations are given concurrently with this part of the course. The second part includes clinical instruction in medicine and surgery at London teaching hospitals and specific fevers at the Brook Hospital, Woolwich. This part of the course is also for a period of approximately three months. Examinations are held at the conclusion of each part of the course, and thereafter officers are selected for training in the specialist subject for which they are mostly qualified or show aptitude. The third part is up to a maximum of twelve months, and is devoted to the study of specialist subjects such as medicine, surgery, hygiene, pathology, otology, dermatology, midwifery, etc., by such officers as have qualified for further study in the preceding part of the course. The work is carried out either at the Royal Army Medical College or at a recognized teaching hospital.

Junior Officers' Course

Before the war of 1939–45, junior classes consisting of officers of the Royal Army Medical Corps and Indian Medical Service joining the Service normally began the first of February, May, September, and November, and were of approximately ten weeks' duration. This period was devoted to the study of military hygiene, pathology, tropical medicine and entomology, and military surgery. In the last week of the course examinations were arranged. These junior officers' courses are in abeyance for the time being. At the present time short intensive courses in tropical medicine, entomology and hygiene are given to officers about to go over-seas on their first appointment to Emergency Commissions in the R.A.M.C.

General

The instruction in tropical medicine includes a course of lectures and clinical demonstrations. In addition instruction in entomology is given. The Entomological Department is very well equipped with specimens and material for this purpose. Besides the teaching of tropical medicine facilities are available for carrying out research on problems of importance to Service personnel.

The principles and practice of modern military surgery are taught. Courses are held as above and deal with the surgical lessons which have been learned as a result of war experience and cover both general and regional surgery; the lectures are illustrated by visual means, pathological specimens, diagrams, slides and films, and practical demonstrations of surgical methods are arranged. The surgery of tropical diseases has its due place in the syllabus, while stress is laid on the influence of tropical diseases on the management of surgical conditions in the soldier both at home and abroad —the facilities offered by a small but very adequate Department of Anatomy, together with an excellent library of reference works and journals, are of the utmost value to these officers under instruction.

The training at the Royal Army Medical College is as varied as it is comprehensive. As regards the teaching of pathology, the syllabus of lectures for the junior and senior classes is designed to cover the subjects taught in the classes of tropical medicine, surgery, and hygiene. Specialists in pathology receive all their training, except in the performing of necropsies, at the College. The syllabus includes separate courses of lectures on bacteriology in its widest sense, serology, haematology, biochemistry, histology, and histopathology, protozoology, and helminthology. In all subjects special attention is paid to the diseases of tropical countries.

The Vaccine and Serum Departments, now separately accommodated at the Emergency Vaccine Laboratory at East Everleigh, Wiltshire, are a part of the Pathological Department of the College and are responsible for the preparation of T.A.B. and cholera vaccines for the Army and for the preparation of standard reagents for agglutination tests.

The Hygiene Department of the College, in addition to the teaching of hygiene, has facilities for the carrying out of research of importance to the Army from the hygiene point of view, and much work of this kind has been accomplished in the past, and will be a feature of the activities of the College in the future. Well-equipped laboratories of adequate capacity exist for instruction in hygiene laboratory work of all kinds. There is also a well-organized hygiene museum. Those officers taking a specialist course in hygiene are given the opportunity of taking the Diploma of Public Health and the Diploma in Tropical Medicine and Hygiene, and most of the instruction for these diplomas is given at the Royal Army Medical College.

The course in psychiatry consists of lectures partly on clinical psychiatry and psychopathology, and partly on the applications of psychological principles to morale, discipline, personnel selection, and other purely military matters. There are also demonstrations on clinical cases held at Banstead and Sutton Emergency Hospitals and demonstrations of selection tests by a Personnel Selection Officer.

The School of Radiology which exists within the College for the training of radiologists and radiographers affords ample material for teaching radiological diagnosis to officers on the course.

Courses for Other Ranks

Laboratory Assistants.—Before the war of 1939–45 a course of eight months' training in laboratory methods—culture media, apparatus, laboratory technique, chemical analysis and hygiene—were held. The course was divided into two parts—4½ months in pathology and 3 months in hygiene. Examinations were held at the end of each part.

Similar courses are at present in being at the College but in a modified form.

Correspondence

Medical Literature for Liberated Countries

SIR,—Reports and requests from U.N.R.R.A. missions in Europe make it abundantly clear that the greatest expressed need of doctors in the liberated countries is for medical literature covering the war years, so that they may bring themselves up to date with advances in unoccupied countries. From time to time appeals for medical literature for individual countries have appeared in the medical press, and the British Council, the Ministry of Information, the Royal Society of Medicine with its microfilm scheme, and other bodies have done something to cope with the problem, but as a whole the needs of Europe have hardly begun to be met. Even if U.N.R.R.A. could spend its now scanty funds on medical re-education—which it is authorized to do only in the limited sense of informing doctors how to use drugs and other medical supplies supplied by U.N.R.R.A. with which they may be unfamiliar—a special difficulty arises in the case of British medical and nursing literature on account of the paper shortage.

I am therefore appealing for complete sets of general and specialist medical and nursing journals covering approximately the war years. They should be sent to Dr. H. Hadaway, Room 1934, Health Division, U.N.R.R.A., 19, Portland Place, London, W.1 (Telephone: Langham 3090/341), and carriage will be repaid if requested. If it is felt that the sets cannot be given free of charge a price should be stated before the sets are forwarded to us, and we will try to obtain authority for their purchase. A particular request which we have so far been unable to meet is for a complete set of the *Lancet* (1939 to 1945 inclusive) for Hungary.—I am, etc.,

NEVILLE M. GOODMAN.
Director of Health,
London, W.1. European Regional Office, U.N.R.R.A.

Sir Almroth Wright and Anti-typhoid Inoculation

SIR,—Sir Almroth Wright has just passed his eighty-fifth birthday and the *Times* has reminded us that this year is also the fiftieth anniversary of the beginning of his work on prophylactic inoculation against typhoid fever. That work was an outstanding landmark in the history of medicine not only because of its immense practical results but because it demonstrated the possibility of evaluating the changes in an inoculated person's blood which result from successful immunization. From that time immunization ceased to be a hit-and-miss procedure. Wright himself, in his first paper on the subject, was careful to point out that the idea of using prophylactic immunization against typhoid fever (and also the use of a non-living vaccine for the purpose) had come to him from Haffkine, who had applied a similar procedure in combating cholera in India. It is however beyond doubt that the whole credit for working out anti-typhoid immunization and for getting it adopted in the British Army in spite of considerable opposition from some in high places belongs to Wright.

In view of this it is surprising to read in Dr. Guthrie's recent *History of Medicine* that "During the South African War of 1899–1902 typhoid fever was a more formidable foe than the enemy and accounted for twice as many deaths as his weapons. In the Great War typhoid fever was relatively rare and even in the most unhealthy centre, that of Gallipoli, the incidence was very small, and the enormous improvement was almost entirely due to the success of anti-typhoid inoculation. This happy result may be traced to the labours of one man, Sir William Boog Leishman (1865–1926), a medical graduate of Glasgow.[3]" And in a later sentence: "Along with Sir Almroth Wright, who preceded him as Professor of Pathology in the Army Medical College at Netley and whose name is closely linked with the discovery of vaccine therapy, Leishman set himself to devise a system of inoculation against typhoid. . . ." The reference given in the above quotation is to page 1058 of Sir Harold Scott's *History of Tropical Medicine*, but it is difficult to see how the relevant sentence on that page can support Dr. Guthrie's statement. It reads as follows: "In 1897 he (Leishman) returned to England and was posted to the Victoria Hospital, Netley, as medical officer. Netley was at that time the headquarters of the Army Medical School, later transferred to Millbank as the Royal Army Medical College. Dr. (later Sir) Almroth Wright was then Professor of Pathology and Leishman gained experience under him, and together they inaugurated inoculation against typhoid fever. He also assisted Wright in his work on anti-typhoid inoculation in the South African War and in opsonic investigations of the *Staphylococcus* and *Brucella melitensis*." On another page Sir Harold Scott refers to "Sir Almroth Wright's anti-typhoid vaccine."

It is to be noted that Wright's anti-typhoid work began in the summer of 1896 (*Lancet*, 1896, **2**, 807), whereas, according to Sir Harold Scott's statement, Leishman was posted to Netley in 1897 as medical officer. It is also noteworthy that Leishman's name appears as joint author of only one of the series of five important papers on anti-typhoid inoculation published by Wright between 1897 and 1901, this one appearing in the *British Medical Journal*, 1900, **2**, 122, that is, three and a half years after the beginning of the work. In order to check up my memory (not at first hand) of these events I recently wrote to one who was a pupil of Wright's at Netley and himself took part in the early work on anti-typhoid inoculation. He replied that in his view "Wright and Wright alone was the originator of anti-typhoid inoculation with killed vaccine"; and he adds that Leishman was not even on the laboratory staff at that time. "He had nothing to do with the introduction of anti-typhoid vaccine."

It would seem then that Dr. Guthrie has in some way been misinformed on this matter. I hope therefore that in honour of the greatest figure in English bacteriology this mistaken attribution of credit may be put right before it gets copied into other books.—I am, etc.,

Birmingham. LEONARD COLEBROOK.

International Medicine

SIR,—Your article (*Supplement*, Aug. 24, p. 68) on the International Medical Conference to be held in London raises problems which I feel are of such importance to the future development of British and European medicine that I venture to make some comment on the question of international medicine. Undoubtedly German and Austrian medicine had a great influence on the practical and scientific medical outlook and progress on the Continent before Nazification brought about its decline and the war its final destruction. Great Britain should fill this gap, and it is certainly best suited to take the lead in creating something like a fellowship among the medical professions of different European nationalities.

Occasional international conferences alone, desirable as they are, will not create the bond which is necessary to achieve this aim. What is needed and what Germany and Austria used to provide is a far more personal and individual contact with the doctors and medical scientists of other countries, enabling them to receive up-to-date postgraduate training when they desired, to become conversant with the methods, progress, and problems of modern medicine, and to take home with them knowledge which will stimulate their own work and their own thoughts. The publication of abstracts of world literature is a very valuable method of making knowledge generally accessible and will be a much needed substitute for the German *Zentralblätter*, which used to be of the greatest help to anyone who was engaged in scientific work. But even this will not solve the whole problem.

It was the amount of clinical research done by workers in Germany and Austria that established the reputation of individuals and schools and induced foreign doctors to go there for instruction and work. Clinical research work in Great Britain may need some stimulus to achieve the same result. Besides this, these countries had a comprehensive scheme to attract and instruct foreign doctors, and I think some similar institution may have to be established over here. In Berlin, for instance, the following arrangements existed: (1) Regular vacation courses of five to fourteen days' duration on varying medical and surgical subjects, which were held at the Institute of Postgraduate Studies in conjunction with the big hospitals and the faculty of medicine. These courses were advertised in the foreign medical press, and foreign universities received

the syllabus; the lecturers were well-known men who had the material of hospitals, sanatoria, etc., at their disposal. Several courses on different topics were held at the same time. (2) A series of individual and private courses by a number of university teachers, the list of which could be obtained abroad and which could be arranged at any time. These courses covered the whole field of medicine including practical instruction in diagnostic and therapeutic methods; each course was supposed to last for a fortnight or a month and provided first-class theoretical and practical tuition even in specialized branches of medicine. One of the attractions to the teacher was the comparatively high fee.

It would be easy to make similar arrangements in London, perhaps in connexion with the teaching hospitals, the post-graduate schools, the professional colleges, and the University. There is no place in western Europe where it could be done better. Vacation courses should be combined with visits to hospitals, social welfare institutions, research laboratories, pharmaceutical factories, etc. Some of the courses may also be arranged in French for those who do not possess sufficient knowledge of the English language. No difficulty or expense would be too great to provide Europe with an international centre of medical instruction and postgraduate teaching which is urgently needed.—I am, etc.,

London, W.1. H. UCKO.

"The Closed Shop": a Parallel

SIR,—In the course of an admirable leader in the issue of Aug. 28 on the ethics of the "closed shop" policy the *Times* expressed the editorial view as follows: "No one can gainsay that to make a man choose between throwing up his job and joining a union is to impose a limitation on his personal freedom. To make membership of one particular union the sole passport to work in a particular industry, with incapacity to obtain employment the only alternative, is indeed a grave social decision, requiring the most powerful and cogent arguments of individual as well as social advantage before it can be justified."

Further on in the course of the leader the *Times* voiced its apprehension that the policy might spread from industry to professional occupations such as journalism: "In a wide range of professional occupations, involving the independent exercise of individual skill and judgment, the community's interest can scarcely admit the case for the closed shop. In journalism it might even invest unionists with an unwarrantable power of control over freedom of expression."

The principal objections to the "closed shop" are summarized in another passage: "The most serious objection to the closed shop, as important as the argument about personal freedom, of which it is indeed a particular facet, is the power over their members which it gives to trade unions. If in the last resort a man can leave his union with a chance of finding work, the official leaders must always have in mind the necessity to meet his needs. If he has no escape, it may well increase the temptation to undemocratic leadership, of which some already complain."

If one were to substitute "The 100% State Medical Service" for "the closed shop" and "the Minister of Health" for "the unions," could it be contended that these arguments lose any of their cogency? The position of the doctor who exercises his option to remain outside the State Medical Service seems to have received less consideration than it deserves, and there would appear to be an ominous parallelism in the "closed shop" on which our profession would do well to ponder.—I am, etc.,

Camberley. E. S. PHIPSON.

Health Service Bill

SIR,—Reading the correspondence since the Annual Representative Meeting induces one to doubt whether the meeting was altogether a success, and whether it did in fact represent the considered opinion of the profession, especially the younger members. Many of the statements used, though greeted with loud applause, would be difficult to substantiate.

What proof is there that not every doctor will be free to enter the Service; surely the official statement during the Third Reading of the Bill was emphatic enough to confute this allegation? The remark as to the direction of doctors has been shown to be no more than a nightmare, and to be a real improvement on the present troublesome method of getting a practice. Again, on what grounds can it be asserted that the reason for the payment of doctors by part salary is the Minister's desire to obtain more control over the profession, though he explained that to a man starting practice it might be a useful, often essential, help? We may expect an increasing number of medical men starting practice in the coming years, men who by the help of county council scholarships have been enabled to qualify, and whose parents will not be able to maintain them during their early years of making a competence. A medical man whose continued inclusion on the list is found on inquiry to be prejudicial to the Service is in no worse case than he would be under N.H.I. regulations, except in the matter of degree, though in either case his continuance in any sort of practice afterwards will be fairly unsatisfactory, his private practice only barred so far as his reputation is concerned.

If the referendum to be taken is to be the last word and the profession decides to refuse service, how are the general practitioners, especially the younger men, to subsist after the Act comes into force? Strangely, no practical discussion is recorded on this point. Incidentally, as the Minister has stated that the Service cannot be properly worked until there are many, very many, more doctors, can we bargain with him that there should be no attempt to put into practice a Service that might be discredited if not meanwhile worked satisfactorily, and (as was pointed out later by a medical man) the profession could not honestly undertake the work knowing that there would not be enough medical men to carry it out properly? There are many things in the new Service that doctors now in practice may not like, just as before 1912 they feared the Approved Societies, whose administration they now regard with satisfaction.

Than Dr. Dain no one has done more during those long years of invaluable service to the profession, so that one regrets that, on this occasion, the desire to encourage and unite the profession in a great fight persuaded him to make a fighting speech less logical than is his wont. I trust that he will not take amiss this criticism, by an old friend, of the A.R.M. just held.—I am, etc.,

Westbury, Wilts. CHAS. E. S. FLEMMING.

SIR,—I have been following with great interest the articles and letters in the *British Medical Journal* about the Health Service Bill, and now I see that it has been read a third time in the House of Commons in spite of the long and determined stand made against it by the medical profession. However, I noted that Mr. Bevan admitted that without the co-operation of the medical profession and all health workers the scheme was bound to fail.

As a lover of freedom—especially individual freedom—the freedom in which most British people ardently believe and for which they are prepared to die if need be, I have felt strongly and deeply about the struggle which the British medical profession is making against its threatened loss of freedom. At first it seemed that they had no hope against the avalanche of opposition which confronted them, just as Britain seemed lost when the Germans overran France in 1940. But then the inherent qualities which the British people possess, especially their burning love of freedom, gave them the courage, the resolution, and the stamina to withstand an almost irresistible power that threatened to overwhelm them. The brave people of the little island won eventually and saved not only their own but the freedom of the world. The medical profession of Britain, having fought for national and individual freedom during the war, now fights for the individual freedom of doctors and of patients, and for the right for each and every doctor to live and practise where he wants, to say and write what he believes to be true and best in spite of what the great and mighty may say to the contrary, and to work along lines for which he knows he has the greatest aptitude and liking and whereby he will consequently render the greatest good to the people for whom he works.

This is a great cause for which the doctors of Britain are fighting, and the medical men of the rest of the world are following the struggle very closely and with anxiety, for we all know that the main torch of individual freedom burns in

Britain. Should it be extinguished, other countries will no doubt follow Britain's example and individual freedom of action, thought, and expression in medicine will be hampered and restricted to the detriment of mankind. Knowing the sterling qualities of British doctors and their love of individual freedom, I have no doubt that the doctors of Britain will not lose in this their greatest fight of all time.—I am, etc.,

Adelaide, Cape Province, S. Africa. F. A. LOMAX.

SIR,—I sincerely trust that the medical profession will beware of accepting such points of view as are put forward by your correspondent Dr. Peter Waddington (Aug. 31, p. 307), for he uses the very arguments which led to the Nazification of Germany—namely, that no man may think for himself but must accept whatever views are dictated by the Government of the moment. From Dr. Waddington's letter it would appear that because less than one-half of the electors in this country, voting in an election held under most abnormal conditions, returned a Labour Government to Parliament it is incumbent upon everybody, doctors or otherwise, to swallow whole anything that this Government chooses to do. It is not a question of State Medical Service versus no State Medical Service. Every political party is committed to that, and so is the B.M.A., with whom the idea really originated. Therefore we can have no quarrel with the Government for introducing the Bill. According to Dr. Waddington, however, we have no right to object to any terms which the Government may impose in the Service. We are not to take exception to the fact that the Bill entirely negatives certain basic principles which have been laid down by the profession as essential in the interests of both patient and doctor. We are not to object to placing our necks under the heel of a dictator who by the terms of the Bill takes to himself such a measure of absolute power as has never before been accorded to any Minister of the Crown. In fact we must have no voice or opinion except such as may be dictated by the powers that be. Almost every day the newspapers report strikes among various types of workers who find the terms offered to them unacceptable. Apparently doctors alone must take whatever is coming to them. The docker strikes for his democratic rights; the doctor (according to Dr. Waddington) appears to have no rights at all.—I am, etc.,

Hove. NORMAN MAPLE.

SIR,—Dr. G. H. Urquhart's letter (Aug. 31, p. 307) is one I hope every medical man, especially the younger ones, will read. Yes, we have an opportunity which will never come again of making a firm stand against tyranny and totalitarianism, which the public and future medical men will bless us for. All through the country a fight is being put up by all classes against the threat to our rightful liberties and freedom by a power calling itself National Socialism; a power with the same name and teaching the same ideology that brought ruin to Germany. Surely an educated and honourable profession such as ours is not going to be caught in this trap.

The Insurance Health Act of 1912 had at least one redeeming point: it did not do away with private practice. If this Bill is accepted as it is, let there be no mistake, private practice will cease to all intents and purposes. At the will of one man or woman, whether ex-lawyer, miner, or bus-conductor, a medical man can be turned out of the Service without even right of appeal to a High Court. If this happens his position will be very serious, there will be no private practice for him to turn to and he will probably find himself conscripted into one of the fighting Services. With such a possibility threatening them many will become servile servants of the Minister and seek to curry favour in various ways, and no member of our profession should place himself in such a position. Lastly, bad as it will be for us, it will be equally bad or worse for the public, and it is for us to protect them.—I am, etc.,

Merstham. HOWARD M. STRATFORD.

SIR,—Dr. A. H. Holmes (Aug. 24, p. 272) mentions the differing methods of remuneration—by capitation system, a salary, or payment per item of service—and by reference to the existing Midwives' Act suggests a support of the latter method from the fact that he has not heard any adverse criticism of such legislation. I am happy to provide this for him, as such criticism embraces the necessary adjustments to existing terms of service before contentedness of working conditions is achieved.

The remuneration afforded under this Act has always been less than the minimum private fees for the varying items described therein. Of recent years an increase of remuneration has been stipulated, varying approximately from 10 to 25%, although the cost-of-living index has risen 100%. Notwithstanding, this form of administration received my sincere support, and Forms of Medical Aid received priority.

Coincident with the increase in the scale of fees I found I had to render an additional "form of account" on private notepaper, and I also found that payment rendered ceased to be itemized by the local authority. This lack of itemization rendered it impossible to check payment with accuracy, although it became apparent over a period of time that a steady deduction from the accounts rendered had taken place. Insistence on itemization of accounts paid then revealed the fact that these deductions had occurred without notification and solely according to how the local authority had accepted or interpreted the Act. A typical instance of such deduction is the rendering of an account for an obstructed labour for which summons was issued and which was treated with priority, and the payment for treatment of a post-partum haemorrhage and ruptured perineum which was effected, the original emergency for which summons was issued having passed before arrival at the case. There is a 50% difference between the remuneration of the differing items.

The Minister concerned is not able to offer direction to the local authority regarding amendments in their methods of business administration, and he rules that a practitioner is not paid for the emergency for which he is summoned but for the emergency or otherwise which he finds on arrival at the case.

Surely no one but an overt masochist would work under such terms and conditions, considering that private fees are already reduced in order to assist the functioning of the Act. There furthermore cannot be any logic in such ruling when, as in the case of a dependant of a member of H.M. Forces, the private fee is refunded.—I am, etc.,

Tipton. L. H. EUNSON.

SIR,—The point that refusal to join the new Service would not be flouting the law has been made on several occasions, but I do not consider that sufficient consideration has been given to this fact in relation to the proposed plebiscite on: Should negotiations on regulations be made? A "Yes" to this question may be given by doctors who subsequently will not join the Service because the negotiations may not meet with their approval. A "No" may come from doctors who will subsequently join the Service because there may be negotiations which will meet with their approval. The "Yes" or "No" is a personal decision taking many external factors and a prophecy of the future into consideration, and the percentages of "Yes" and "No" are a potent factor controlling the future if they mean anything. But would they mean anything real? The percentages expressed by the simple issue of the plebiscite may be changed on the day of reckoning, and therefore, though the answer is an attempt to control the future, it is known that the answer may be a totally unreliable control of the future. Surely a paradox?

For the plebiscite to be of any real value as a mandate for the Council it is necessary that further questions be asked, and one at least of these further questions must be entirely different for those who answer "Yes" and those who answer "No" to the simple question. To the "Noes": "If negotiations do take place do you intend to join a Service the form of which has been agreed between the Minister and the profession by consultation mainly in accordance with the expressed principles of the profession?" To the "Ayes": "If negotiations do not take place do you intend to join a Service the form of which has been decided mainly by the Minister in accordance with the control conferred on him by the Bill?" I consider these questions to be essential for clarification of the wishes of the medical profession, but further questions would be useful—e.g., "If you are in a 25% minority will you co-operate with the majority?" "Do you consider that the interests of doctor and community could be better served by a national organization than they are now?"

The above part of my letter should be read in conjunction with the excellent letters by Dr. E. W. Broster (Aug. 10, p. 206), Dr. Ayton-Ormston and Dr. Brown (Aug. 24, p. 273).

I am entirely in agreement with the spirit of the Bill and with the spirit of the principles of the profession, but I disagree with much of the letter of the Bill and with little of the letter of the principles of the profession. Dr. Collier (Aug. 31, p. 308) has drawn attention to the soundness of Principle 2, but I would like to show my dislike for the wording of Principle 5—"Every registered medical practitioner should be entitled as a right to participate in the public service"—why "right"? If doctors demand rights then the public and the Minister will demand their rights. Only the community has rights, and these exist only when individuals submerge their rights and do what is right for the community. The spirit of Principle 5 is that doctors should be free to join or leave the Service according to the current interests of the community, but the wording demands participation (perhaps of the salary without any work) anywhere at any time, even contrary to the interests of the public and the Minister. Surely the wording and the spirit could be better expressed than at present?—I am, etc.,

Birkenhead. ALEX. M. FRASER.

SIR,—The Minister of Health stated in the House of Commons that "in a recent plebiscite there were a majority of doctors in favour of the abolition of the sale and purchase of practices" (*Hansard*, July 26, col. 473). This may be untrue, but no denial was made in the House, and I have seen nothing from the Public Relations Officer of the B.M.A. in the Press. On the other hand the Chairman of Council, Dr. Guy Dain, stated that the voting of the Annual Representative Meeting on this issue was 12 in favour and 229 against. This is the Principle 1 referred to, and the matter should be made clear at once.

It is difficult to believe that doctors will part with the goodwill of their practices to the State for paper money the value of which now stands at only one-third of its purchasing power in 1911 and must depreciate further with a profligate Government. Whether they are foolish enough to do so or not, the difference in the statement of the Minister and that of the Chairman of Council should be made clear, so that even a Member of Parliament may know the facts, and the dictator refuted.—I am, etc.,

Beckenham. A. E. BLACKBURN.

Principle 2 and the Health Service

SIR,—Dr. Howard E. Collier (Aug. 31, p. 308) writes: "In my opinion Principle 2 is the only solid ground on which opposition to the new Service can be rightly undertaken, and that only *after* the Act has been given a trial." This means presumably that we should agree to eat, sleep, and work in handcuffs in order to find out how we like it. If we find such control irksome we must then get the handcuffs removed. But will this be possible once Mr. Aneurin Bevan has snapped them on and removed the key? Even a tame rabbit would hesitate to be so foolish.—I am, etc.,

Bournemouth. MARGARET VIVIAN.

Health Service Bill and the Public

SIR,—In the impending struggle over the National Health Service Bill it is vitally important that we as a profession should carry public opinion with us. Unfortunately two things are rather painfully obvious. First, that while most people think highly of their own doctor they have nothing like as good an opinion of doctors in the mass. Secondly, that we have not on the whole had a good press, while many of the things said against us in the press are based on misunderstandings of our ideals and motives. If we could transform this situation we could transform our whole outlook.

The silly part of it all is that we *could* have an excellent press if we went the right way about it. I have discussed this matter with a number of journalists—and journalists as a whole are men who know just how many beans make five—and they are unanimous in asserting that we doctors not only hide our light under a bushel but go to a lot of trouble to blow the thing right out.

Day-to-day medical life in practice and in hospital is crammed full of what Fleet Street calls human stories—stories which if published would raise the public estimation of our profession right up to the skies and get us anything we care to ask. As random examples, there are hospitals which get 80% of five-year cures of cancer. There are hospitals and clinics which take rheumatic workers who would otherwise be crippled and restore them to their jobs; there are doctors and hospitals researching into analgesia in childbirth; there are doctors in colliery districts who risk their lives after explosions going to attend accidents; and many, many other things which could and should be told.

Medicine is no longer a "mystery." It is part of the life of every citizen, and he wants to know about it. But what happens? First, such stories are carefully concealed. If they are told in the medical press they are disguised in scientific language, embellished with statistical tables, and made incomprehensible to the man in the Fleet Street office who is diligently yawning his way through the current medical periodicals in search of a story. Secondly, if he is a really bright boy and glimpses a story, woe betide him. He approaches the hospital or the doctor concerned and has the temerity to ask for an interview. Horror! We do not talk to the lay press. We slam the door in the nasty man's face, repress a shudder, and hope to heaven no one saw him about the place. And then we wonder why doctors don't get a good press!

We act like this for two reasons. First, we have been trained scientifically to loathe premature publication and to avoid any imaginative embellishment on the cold hard facts. Secondly, we are terrified of being accused of advertising and finding ourselves in Hallam Street. As long as we continue to run away from these two bogies we shall have a bad press, and public opinion will not be behind us as it should. If we want to win our fight we must alter all this, and we must do it now.

First, it must be realized that the general public are not very willing to read unembellished cold fact. They like jam on their bun, and the journalist's job is to provide the jam. It is no use being squeamish about this. If the story of what doctors do for the people of this country is to get across at all it will only get across with the jam on it. Secondly, this bogey about advertising. It is a hoodoo. Any doctor who really wants to advertise himself can and does get away with it. There is the tactful gossip paragraph, there is the righteous disclaimer. It can be done, but so few think it worth while that it is ridiculous to make every doctor afraid on that account of seeing his name appear in the press. If the G.M.C. wishes to further the interests of the profession as a whole it can here and now declare that it doesn't give a damn if every doctor in England has his name in the papers. It will need a great effort by the G.M.C., but it is an effort they should make.

Then, Sir, if you and the editors of other medical papers could give a half-column a week to the sort of stories the lay press is avid for in language the lay press can understand I vow it will not be many weeks before the man in the street will be saying: "These doctors are damn good fellers. Let's see they don't get a dirty deal. They know their own job superlatively well. Let them run it."—I am, etc.,

Ashstead. W. EDWARDS.

*** Part of the trouble is that the journalist's jam is taken by him and by the lay public as the bun.—ED., *B.M.J.*

Medicine and Economics

SIR,—Our noble profession seems to be in a rather ignoble condition at present. The portals of entry to the profession are choked with applicants while at the same time hundreds of energetic young doctors are unemployed. On the other hand the established general practitioner knows only too well that constant overwork is the only way to maintain an income sufficient for his modest needs. Thus we have the position that whereas there are too few doctors for the work awaiting them there are far too many doctors for the money available to pay them. It is of course the low rate of insurance capitation which is cramping general practice. A considerable increase (I do not mean two shillings) would secure employment for all these young doctors. General practitioners are

longing for assistants, whom they cannot afford to pay at present. We are in the midst of circumstances where the onlooker possibly sees most of the game. I take off my hat to our philanthropic colleagues who represent us on divisional, branch, and central committees, whose breakfast tables are snowed under by reports of Hansard, headquarters' circulars, and all the rest of it. Yet I fear they cannot see the wood for trees.

Success in general practice does not necessarily endow a man with the qualities required to tackle an experienced politician such as a Cabinet Minister. Sending a deputation from the Insurance Acts Committee to interview a Minister of Health is like sending lambs to the slaughter. The I.A.C. should take expert advice from an economist. He would give them the rights of it inside a day or two. The plan of action should then be entrusted to a skilled agitator for its execution. This advice will come hard to the I.A.C. Twenty years of practice, issuing dogmatic instructions to patients who do not know enough to criticize or assess the information given, does not imbue a doctor with humility. Most of us consider ourselves qualified to express an opinion on anything from motor-cars to Mozart. This form of conceit has cost us dearly in the past, and I say again that we should pay for expert advice.

In asking for a substantial increase in capitation our agitator will have the solidity of all panel doctors behind him. If we fail to secure a concession from the Minister on this point how are we to secure alterations or modifications in the Health Bill when 60% of doctors think one way and 40% the opposite? I consider that the present dispute on the capitation fee is a show-down. If the Minister does not concede the modest 15s. in the face of the findings of the Spens Committee and the unity of panel practitioners he will never concede anything in the future, and we shall know our power to be nil.—I am, etc.,

Preston. ROBERT SLATER.

Disabled Persons Act, 1944

SIR,—While welcoming the further publicity given to the Disabled Persons Act by your article (Aug. 24, p. 268), I would like to comment on some continued misconceptions. This is important since the successful launching of the Act largely depends on all doctors concerned being first well informed and later co-operating. As in other forms of enlightenment, the medical journals have a primary function. It is therefore with some anxiety and regret that I note your mixed blessing on this scheme to guarantee employment for the disabled person.

The Act itself has really evolved as a compulsory application of the King's Roll, whose success was limited to ex-Servicemen of the first world war and to good employers who felt a moral obligation in employing handicapped soldiers. Other employers shirked their responsibility to the community by skimming the cream off the labour market and leaving the handicapped workers as "unemployables" and a permanent drain on the nation. They might have found some justification for this skimming process during periods of high unemployment. However, in wartime and its continued emergency of export drive, and, we hope, in the future cornucopia of promised full employment, these "unemployables" become at least of economic value, apart from a national responsibility. Thus the labour which the bad employer complains of having "dumped" on him and thus "interfering with his selection of workers" is merely his quota of obligations to the community. During wartime, remember similar complaints against fire-watching and Home Guard—and the same attempt at shirking? The good employer, i.e., the most efficient, has used good personnel management in placing the man in the job which suited him.

Regarding the managerial encouragement of eligible workers to register, your article has got the wrong end of the stick. In this factory the handicapped worker is advised by the industrial medical officer (who is also a member of the local disablement committee) to become registered. The shop stewards, who have trade union representatives on the same local committee, support the medical advice. The personnel manager further encourages the worker by presenting his registration as an assurance that in time of redundancy the enrolled worker will be more likely to retain his job, all other factors being equal. The scheme here is working to the satisfaction of the worker, the employer, and the local doctors. Many consultants in hospitals are already advising enrolment as part of treatment in necessary cases.

It may be of interest that in this factory the largest diagnostic group on this modern "King's Roll" is peptic ulcer at 28%; second is cardiovascular at 18%; and then arm or leg injury or disease at 10% each. This dominance of peptic ulcers supports the first article in your *Journal* of the same date by Gainsborough and Slater, in which they state "more attention should be paid to the use of resettlement facilities under the Disabled Persons Act . . . " in preventing the expected relapse of peptic ulcers. These percentages, and those given by Sir Reginald Watson Jones, also show that the hard core of those who cannot compete with the able-bodied in open competition is probably under 5%. Thus the development of the special corporations for sheltered industry is not, as you state, "the real solution to the real problem," as the percentage is so small. This sheltered industry is only for the dregs at the bottom of the barrel.

There is however some reasonable criticism that can be offered. The first group of Disablement Rehabilitation Officers tends to be staid, middle-aged officials from the Ministry of Labour. Probably there is no other immediate source of recruits for the novel role of D.R.O. This first group appears keen and enthusiastic in reducing the birth pains of the new Act, but I feel that there should be some test of human aptitude for this new job, followed by training for at least two years. If possible the future D.R.O. seems to require a social conscience, a nursing or hospital background, and an inside knowledge of industry from apprenticeship. Thus instead of a mixed welcome for this new form of King's Roll we might more profitably conserve our emotion for sympathy, education, and encouragement for the present D.R.O., whose position is so vital a link in this scheme to guarantee suitable employment and placing for all disabled persons.—I am, etc.,

Little Lever, near Bolton. R. F. L. LOGAN.

Tobacco and Ulcer Dyspepsia

SIR,—The statistical article on "Tobacco and Ulcer Dyspepsia" by Mr. R. A. Jamieson, Prof. C. F. W. Illingworth, and Dr. L. D. W. Scott (Aug. 31, p. 287), prompts me to make a few observations which I hope are not irrelevant. The writers of the article do not appear to have taken into consideration the fact that cigarette-smoking is the mark of the lean, tense, anxious, hyperchlorhydric individual who is liable to develop and suffer from a peptic ulcer; the heavier his cigarette consumption the more can this constitution be undermined and the greater the proneness to ulcer dyspepsia. The pipe smoker on the other hand is usually an older man who has reverted to the infantile suckling instinct. He is placid, comfortable, and probably hypochlorhydric. Considering he swallows his nicotine in mouthfuls it is surprising more damage is not done. Of course he does not inhale as does the cigarette smoker. The young man begins smoking a pipe as part of a character act. It may become a habit later and it is often an aid to thought. He has not the same constitutional flaws as the cigarette smoker and is usually thoughtful and tolerant. What of the cigarette smokers who have not and never will have dyspepsia? These people usually smoke for social reasons, especially in company, with drinks and after dinner. They are of the herd. Witness the groping for cigarettes and the flaring of lights all over a cinema when an actor lights a cigarette. The uninterested non-smoker (not the rigid obsessional individual who turns his back on earthly pleasures), too, is usually a placid easygoing fellow with no psychosomatic ailments.

Thus to my mind the smoking of cigarettes is a symptom and the nicotine-stained hands a sign of the ulcer diathesis, and the relationship between smoking and ulcer dyspepsia only apparent. It would be interesting to know how far the greatly increased smoking by women has affected the male/female ulcer ratio. It is well to remember that the last inch of the cigarette contains four or five times as much nicotine as the first inch: its own content plus the nicotine condensed from the other two burnt inches. The man with the nicotine-stained hands who tenaciously smokes his cigarette to the very end is the

uncompromising nicotine addict and takes it in big doses. The purely nervous smoker should be encouraged to find other outlets for his emotional tension. Chewing gum would be a better alternative "tic."

In conclusion I have wondered that ulcer cases will readily give up beer but obstinately refuse to give up cigarettes. Although both tend to produce hyperchlorhydria yet the former's ability to sedate as well as release emotional tension counteracts the harm it might do as a gastric irritant and stimulant.—I am, etc.,

Royal Naval Hospital, Yarmouth. ANTHONY C. HAMER.

Treatment of Lupus Vulgaris by Calciferol

SIR,—As reviewer of the *B.M.J.* for the *British Journal of Dermatology and Syphilis* I feel it my duty to point out an error in your issue of Aug. 31, (p. 300). Writing on *The 1945 Year Book of Dermatology and Syphilology* your reviewer states: "Perhaps, however, 1945 will stand out in the history of dermatology as the year in which the treatment of lupus vulgaris by calciferol was first instituted, and that method, initially tried by Dowling at St. Thomas's, London, appears to have been published too late for mention in the year book before us." This treatment for lupus vulgaris was first used in France by Charpy in 1941, though Dowling, who independently began this method in 1943, was, owing to the war, naturally unaware of Charpy's work and has made generous acknowledgment in his papers of the Frenchman's priority.—I am, etc.,

Edinburgh. G. A. GRANT PETERKIN.

Reiter's Disease

SIR,—Drs. R. N. Herson and Frank Marsh both remark (Aug. 24, p. 275) that the trend of symptoms, polyarthritis, urethritis, and conjunctivitis noted in my article (Aug. 10, p. 197) as being characteristic of Reiter's disease may also be associated with bacillary dysentery. Of this I was aware. The suggestion of the identity of Reiter's disease with dysenteric complications has previously been made by Dr. P. Manson-Bahr, *Bull. War Med.*, 1944, **4**, 653. That this may in fact be true I do not deny (because of such a possibility I called my article "The *syndrome* known as Reiter's disease"), but it seems to me very unlikely because (1) in only a few cases of Reiter's disease does diarrhoea occur; (2) in no case in the very considerable literature on this syndrome in Germany and America has the dysentery bacillus been identified (for full list of references see *Archives intern. Med.*, 1946, **77**, 295); and (3) bacillary dysentery was unknown in the Bahamas—neither had the three patients whose stories I recounted any history of a diarrhoeic attack of dysenteric type.

Naturally because a similar syndrome may occur as a dysenteric sequela it does not follow that such a syndrome always possesses such an aetiology. The characteristic signs may in fact be part of a gonococcal infection, and it is in the distinction from this that the importance of the recognition of the Reiter's disease syndrome exists—I am, etc.,

W. P. U. JACKSON.
Henlow Camp. Fl.-Lieut., R.A.F.V.R.

Penicillin and Nasal Sinus Infections

SIR,—In the literature on penicillin therapy there is somewhat half-hearted commendation on its value in the treatment of nasal sinus infections. The references are largely to its local application in various ways including replacement therapy, and I have not seen references to its systemic administration. My experience with penicillin in the treatment of chronic sinus infections leads me to conclude that in the treatment of this condition penicillin represents a very notable advance.

I have had a chronic sinus infection since 1915. This was operated upon in 1922, but with only partial success, and I have had the usual symptoms of a chronic infected antral sinus with nasal discharge of muco-pus and general vasomotor hypersensitivity. Treatment with sulphonamides brought about a considerable degree of symptomatic relief, but I became sensitized to the sulphonamide group. Discharge from the nose was examined by a well-known bacteriologist, and it was reported to contain a penicillin-sensitive strain of *Staphylococcus aureus*.

In communication with Glaxo Laboratories earlier this year, it was pointed out to me that penicillin could be supplied to a degree of purity such that very large single doses up to 500,000 units could be given intramuscularly. I was supplied with some of this material, and four intramuscular injections of 500,000 units were given at 24-hour intervals. Each injection was given in 3 ml. of sterile water, and there was practically no discomfort from the injections. The relief from the nasal symptoms was remarkably rapid. The discharge of muco-pus diminished markedly within four days, and the symptoms of hypersensitivity also cleared up. Ten days after the treatment a bacteriological examination was again made, and the *Staph. aureus* was reported as absent. Whether or not this result will be permanent remains to be seen, but if reinfection did occur at a later date then I would unhesitatingly repeat the same treatment.

I have heard of several other cases which have received benefit in acute and chronic sinus infections from a few massive injections of penicillin. My experience from this treatment makes me urge a further trial. Chronic sinus infection is a common and distressing complaint, and treatment has never been wholly satisfactory. The substantial improvement that may be obtained from a few injections of penicillin would I think place sinus infections as one of the more important indications for penicillin therapy.—I am, etc.,

Bournemouth. J. ROSS MACMAHON.

"Cord Round the Neck"

SIR,—The question as to possible strangling by the cord of the baby as it is born must I think be answered in the positive. I and a district nurse delivered a child two days ago whose cord was tightly wrapped three times round the neck; the cord was thick and healthy, but luckily forty inches long (measured). The nurse was quick to put on two pairs of forceps and help me to divide the second loop of the cord after I had slipped down the first loop. The reason why I consider death of the foetus possible if no help had been at hand is that when the next expulsion pain came on the cord became so tightly constricted round the neck that division was absolutely necessary owing to the force of the contraction, and unless the placenta had separated very quickly choking was bound to occur. This delivery was preceded by apparently inexplicable delay in the rupture of membranes during strong pains, and doubtless the reason for this was the artificial shortening of even this long cord by means of the previous winding round and round the foetus.

As a matter of medical jurisprudence here we have yet another reason for considering concealment of pregnancy a serious crime: not to obtain help at the time of birth may be serious to the life of the infant.—I am, etc.,

Coldingham. F. O. TAYLOR.

The Apparently Acute Abdomen in Pulmonary Tuberculosis

SIR,—Twice in the last three months I have been called to see patients who have been known to have pulmonary tuberculosis and who have complained of abdominal pain of sudden onset and great severity. On examination they both had board-like rigidity of the abdomen with diffuse agonizing pain, and obviously thought their last hour had come. In one case the duty medical officer happened to be of surgical bent and had already called in an anaesthetist to ascertain the patient's fitness for operation, having made a diagnosis of perforated tuberculous ulcer of the bowel. Now in both cases some common features presented themselves. It had been a hot day. Both patients were drenched in sweat as they both had advanced phthisis with high fever, and there is little doubt in my mind that their pain was of a similar aetiology to miners' cramp. I have seen similar abdominal pain in the sweating stage following a malarial rigor, and before I became familiar with the condition these cases caused me a good deal of worry.

The treatment is table salt given in orangeade, about 2 dr. to a pint (8 g. to 568 ml.)

I should like to thank Dr. G. E. Beaumont for his helpful criticism and advice.—I am, etc.,

Chelsea. F. E. DE W. CAYLEY.

Obituary

H. L. H. SCHÜTZE, M.D.

The death is announced from Switzerland on Aug. 9 of HARRIE LESLIE HUGO SCHÜTZE, assistant bacteriologist to the Lister Institute of Preventive Medicine. Schütze, who was the son of John and Caroline Schütze, was born in Melbourne, Australia, in 1882 and was educated at Brackley, Cumloden, and at Melbourne University, where he obtained the degrees of M.B., B.S. He was assistant bacteriologist to Melbourne University in 1905 and later completed his medical education in Germany, where he obtained the M.D. degree of Würzburg in 1907. He was assistant at the Institute of Hygiene there up to 1912, when he obtained a Beit Fellowship and took up research work at the Lister Institute, London. He joined the staff of the Institute as assistant bacteriologist in 1913.

Schütze's scientific work was chiefly devoted to the serological analysis of bacteria in relation to taxonomy. His paper which appeared in the *Lancet* in 1920 on the typing of what was afterwards known as the Salmonella group was of fundamental importance, and the types that he then described were used later by Bruce White and others as the primary basis of their studies. He was chairman of the Salmonella Sub-committee of the Nomenclature Committee of the International Association of Microbiologists from its inception. In 1928 he unravelled the complicated antigenic structure of the flagellated pasteurella, *Pasteurella pseudotuberculosis (Bact. pseudotuberculosis rodentium)* and showed that the flagellar H antigen, which is formed only in cultures grown at 6° C. or lower, is common to all strains within the species, but that the somatic antigens are more complex and may be used as taxonomic criteria. He also carried out important studies on other members of the Pasteurella group. In the case of *P. pestis*, for example, he demonstrated that there are only two antigens—one corresponding to the envelope and the other to the somatic substance. He contributed noteworthy articles on *Pasteurella septica* and on *Pasteurella pseudotuberculosis* to the Medical Research Council's *System of Bacteriology* and collaborated with the late Sir John Ledingham in the paper on the production of active immunity to bacterial and virus infections of man and animals which appeared in the same publication. For a number of years Schütze was in charge of the Vaccine Department of the Lister Institute, both at Chelsea and later at Elstree, where he worked during the second World War. After the war he returned to Chelsea and devoted his whole time to research.

He had a many-sided character and, apart from science, was deeply interested in literature, music, and the drama. He was an accomplished linguist and greatly loved to wander about Europe on vacation with his devoted wife, helping her to collect material for her numerous and successful novels. He made many friends in the varied aspects of life that he touched and his untimely death will leave a very definite gap in their affections. He married in 1913 Gladys Henrieta ("Henrietta Leslie"), the only child of Arthur and Mary Raphael. There were no children of this happy marriage, which was terminated by the death of Mrs. Schütze, also in Switzerland, only a few weeks ago.

R. ST. J. B.

A friend writes: Your epitome of OTTO MAY'S career (Aug. 31, p. 314) was marvellously accurate and true, and must have awakened a chord of affection among his many friends. These loved him for what he was. With perhaps pardonable intrusion may one of those not-so-"brilliant young men" who came down from Cambridge in the early years of this century join in the chorus of gratitude and tribute to his memory. Especially would he recall those happy carefree days when F. J. Cleminson and Otto May did so much for those of us who through lack of aptitude or application found the toils of anatomy and physiology so difficult to combat. This illustrious pair by their wisdom, ability, and human understanding brought many of us safely over the ordeal of the 2nd M.B.—an achievement for which we are for ever grateful. Those early associations in Cambridge were the beginning of closer ties of friendship in London and will always be reckoned as the happiest and most valued part of our student days.

Universities and Colleges

UNIVERSITY OF LONDON

THE LONDON HOSPITAL

It was announced on Sept. 4 at the quarterly Court of the Governors of London Hospital that Miss Dorothy Russell, M.D., Sc.D., had been appointed to succeed Prof. Hubert Turnbull, who retires as Director of the Bernhard Baron Institute of Pathology at the end of this month after 40 years' service with the hospital. Dr. Russell has also been appointed Professor of Morbid Anatomy by London University at the London Hospital.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The following candidates have been approved at the examination indicated:

ACADEMIC POSTGRADUATE DIPLOMA IN PUBLIC HEALTH.—*S. G. Abelson, O. Adeniyi-Jones, *A. Anderson, A. E. Brown, J. M. Brown, E. J. Bury, *A. L. Cochrane, W. C. Cockburn, E. R. Dansie, R. D. Dewar, W. Y. Fettes, C. W. Gordon, C. G. Hunter, M. T. I. Jones, Sung-Jui Liao, M. J. Lowther, J. P. P. Mackey, A. H. M. Richards, E. M. Rowland, Alice C. N. Swanston, G. H. Taylor, J. Watkins-Pitchford.

* With distinction.

UNIVERSITY OF GLASGOW

David Fyfe Anderson, M.D., F.R.F.P.S., F.R.C.O.G., has been appointed to the Muirhead Chair of Obstetrics and Gynaecology in the University.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Faculty, with Dr. Geoffrey B. Fleming, Visitor, in the chair, A. Allison, M.B., Ch.B., C. D. Anderson, M.B., B.Chir., J. D. O. Kerr, M.B., Ch.B., and R. A. Shanks, M.B., Ch.B., were admitted Fellows *qua* physician, and E. A. Chisholm, M.B., Ch.B., J. Hutchinson, M.B., Ch.B., A. McDougall, M.B., Ch.B., J. M. McInroy, M.B., Ch.B., W. Magauran, M.B., Ch.B., F.R.C.S.Ed., and J. C. Walker, M.B., Ch.B., were admitted as Fellows *qua* surgeon.

Medical News

From Nov. 1, 1946, Dr. N. Hamilton Fairley, C.B.E., F.R.S., who takes up his appointment as Wellcome Professor of Tropical Medicine in the University of London, will cease to be Director of the Wellcome Laboratories of Tropical Medicine, but will become consultant in tropical medicine to the Wellcome Foundation. Brig. John S. K. Boyd, O.B.E., at present Director of Pathology, War Office, will become Director of the Wellcome Laboratories of Tropical Medicine.

A meeting of the Tuberculosis Association will be held at 26, Portland Place, W., on Friday, Sept. 20, at 3.15 p.m., when Dr. Honor Smith will read a paper on "Some Clinical and Pathological Aspects of Tuberculosis of the C.N.S." At 5 p.m., papers will be read by Dr. G. B. Dowling on "Treatment of Lupus Vulgaris" and by Dr. D. E. Macrae on "Use of Calciferol in Tuberculous Conditions."

The Paddington Division of the B.M.A. is arranging a special meeting in Room 140 at the County Hall, Westminster Bridge, S.E., on Tuesday, Sept. 24, at 3 p.m., when papers will be read on the causes and prevention of prematurity by Dr. R. Lovell, Prof. F. J. Browne, and Prof. L. S. Bemrose, followed by a discussion. In view of the importance of the subject it is hoped that non-members as well as members from other Divisions will be present.

A course of lectures in skin diseases will be held at the London School of Dermatology, St. John's Hospital for Diseases of the Skin, 5, Lisle Street, Leicester Square, W.C., on Tuesdays and Thursdays, at 5 p.m., from Oct. 1 to Dec. 12.

The ninth annual Louis Gross Memorial Lecture will be delivered under the auspices of the Montreal Clinical Society at the Jewish General Hospital, Montreal, on Wednesday, Oct. 16, at 8.30 p.m., by Dr. Roy R. Grinker, director of the Institute for Psychosomatic and Psychiatric Research and Training of the Michael Reese Hospital, Chicago. His subject is "Psychiatric Objectives of our Time."

The prize-giving ceremony at the London (Royal Free Hospital) School of Medicine for Women will be held in the Great Hall of B.M.A. House, Tavistock Square, on Tuesday, Oct. 1, at 3 o'clock. Prof. Winifred Cullis will deliver the inaugural address for the session 1946-7.

The following have been added to the list of persons entitled to sign type "K" coupon-equivalent certificates for the provision of protective clothing: A person authorized by the Ministry of Health, the Clerk to the Council of the Chartered Society of Physiotherapy, the Registrar of the Board of Registration of Medical Auxiliaries, the Secretary of the B.M.A., and the Hon. Secretary of the N. Ireland District Dental War Committee.

Cardinal Griffin, Archbishop of Westminster, at the opening of the London centre of the Catholic Marriage Advisory Council on Sept. 3, said that at this centre, and at others to be established later, Catholic husbands and wives could obtain advice and guidance in their marital difficulties. It would also try to keep the need for successful marriages and parenthood in the minds of all concerned by every available method of publicity.

Medical men from Norway, Brazil, and Chile have arrived in Britain to study subjects in which they are specialists, and programmes have been arranged for them by the British Council. Dr. Olaf K. Thomassen, a Norwegian physician who has specialized in tuberculosis, is spending September here. Dr. Odair Pacheco Pedroso, of the University of Sao Paulo Medical School, arrived from Brazil on Aug. 30 for a two-month visit to study hospital planning and administration. Prof. Alexandre Lipschutz, who is here to meet workers in the field of cancer and to lecture on his own recent experimental work on tumours, is a director of the centre for experimental medicine in the National Health Service of Chile.

Vienna, with a population of 1,500,000, is one of the few towns in Europe to-day with a surplus of doctors. It is estimated that there are as many as 3,000—of whom approximately half have private practices and the other half function in various hospitals. Of the 1,500 hospital doctors, probably only two-thirds will remain in Vienna to settle down. There are about 1,500 doctors, however, who are still prisoners of war, hoping to return soon, and of these at least a third will stay in Vienna, which will bring the number up to 3,000 again. The same number of doctors have left the country for political reasons. Medical students in Vienna number as many as 3,800.

Dr. F. T. H. Wood, O.B.E., Medical Officer of Health, Bootle, Lancs., has been elected chairman of the Council of the Royal Sanitary Institute, to take office on Oct. 1.

Mr. W. Rowley Bristow, F.R.C.S., has been awarded the Rank of Chevalier in the Légion d'Honneur and a "Citation à l'Ordre de l'Armée."

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* 285 notifications of diphtheria were recorded during the week—an increase of 34 on the preceding week, which was chiefly due to increases of 12 in Liverpool C.B. and of 8 in Berkshire. Measles, whooping-cough, and scarlet fever declined with decreases of 572, 39, and 25 respectively. Decreases were also observed in the notifications of dysentery and typhoid—18 and 17 respectively.

Notwithstanding the fall in the total whooping-cough notifications there was considerable variation throughout the country; the most marked differences were increases of 38 in Warwickshire, 24 in Essex, and 18 each in Staffordshire and Durham.

An increase in the notification of measles was observed in Berkshire and was due mainly to 21 cases being reported from Easthampstead R.D. compared with 5 in the previous week. Similarly in Hertfordshire and Durham fairly large increases were recorded—36 and 34 respectively. In the former county St. Albans M.B. was responsible for an increase of 7 and Watford R.D. for 15 cases. In Durham increases of 11, 11, and 21 were reported from South Shields C.B., Billingham U.D., and Hartlepool M.B. respectively.

In *Scotland* a rise of 9 was reported in the notification of scarlet fever. Forty-five cases of erysipelas were notified—an increase of 18 and the highest notification for twelve weeks. The majority of cases were reported from Lanarkshire and Renfrewshire.

No fresh cases of typhoid were reported. There were 13 fewer cases of dysentery.

In *Eire* there were 20 fewer cases of diarrhoea and enteritis, largely due to the decline in Dublin C.B., from which 19 cases were reported as compared with 37 in the preceding week.

Week Ending August 31

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 744, whooping-cough 1,976, diphtheria 262, measles 1,565, acute pneumonia 279, cerebrospinal fever 41, dysentery 74, acute poliomyelitis 21, paratyphoid 44, typhoid 27.

No. 34.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug. 24.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	39	4	18	2	—	47	2	23	—	2
Deaths		—	1				—	1		
Diphtheria	285	16	77	29	7	409	23	134	55	13
Deaths	3	—	1	—	—	2	—	—	1	—
Dysentery	52	12	19	—	1	232	31	73	1	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	2	1	—	—	—	2	—	—	—	—
Deaths		—					—			
Erysipelas			45	8	1			40	10	2
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				24					98	
Deaths	29	2	9	13	3	46	7	12	20	12
Measles*	2,140	161	60	14	4	1,151	61	36	40	4
Deaths	2	—	—	—	—	—	—	—	1	—
Ophthalmia neonatorum	82	5	20	1	—	74	2	10	—	—
Deaths										
Paratyphoid fever	66	2	7(B)	—	2(B)	17	—	6(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	299	22	2	—	—	318	12	1	5	2
Deaths (from influenza)†	7	2	—	—	—	7	1	—	—	—
Pneumonia, primary			108	6				123	5	
Deaths		15		4	4		16		7	4
Polio-encephalitis, acute	1	1				3	—			
Deaths		—					—			
Poliomyelitis, acute	30	4	1	—	2	31	3	1	5	—
Deaths		—					—			
Puerperal fever		2	16		—			15		—
Deaths										
Puerperal pyrexia‡	138	11	14	1	—	124	9	18	1	2
Deaths		—					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	665	53	128	18	7	1,001	75	194	15	16
Deaths	—	—	—	—	—	2	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	36	2	—	5	1	12	1	2	10	5
Deaths	1	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	2,058	170	41	28	29	1,152	75	26	35	5
Deaths	8	—	—	—	2	2	—	—	—	—
Deaths (0–1 year)	308	45	45	41	15	297	40	42	47	33
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	3,753	579	502	188	106	3,634	484	504	193	116
Annual death rate (per 1,000 persons living)			11·0	12·0				11·4	12·5	
Live births	8,394	1353	1010	394	263	6,819	829	825	357	247
Annual rate per 1,000 persons living			20·3	25·2				16·5	23·0	
Stillbirths	242	30	29			221	36	20		
Rate per 1,000 total births (including stillborn)			28					24		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Unsuccessful Vaccination

Q.—*A child aged three months was unsuccessfully vaccinated against smallpox thrice at intervals of about two weeks. The lymph was fresh and obtained from reliable sources. Does this mean that the child possesses permanent immunity against smallpox? Or is this immunity only of a temporary nature derived from the mother? If so, does the child require re-vaccination?*

A.—An unsuccessful vaccination is not proof of insusceptibility to smallpox. A case has been reported recently of a soldier who had been vaccinated no fewer than ten times, always unsuccessfully, during the twelve months before he died of haemorrhagic smallpox.

True inherited absolute immunity against smallpox, which is but temporary, occurs only among infants born of variolous mothers or of women who have themselves lately undergone successful vaccination. It is not uncommon for primary vaccination to fail to take in a susceptible infant. If a successful result has not been obtained after three attempts at intervals of ten to fourteen days, and if the degree of risk of exposure to smallpox infection warrants some delay, further series of attempts should be made at about three-monthly intervals. In the event of prolonged apparent insusceptibility to vaccinia a change of technique, the use of multiple insertions, and the choice of a different site for the inoculations should be considered; but the operator should not be satisfied until success has crowned his efforts. It goes without saying that the quality of the lymph should be above suspicion.

Purpura in the Elderly

Q.—*For some time I have had erratic subcutaneous haemorrhages on the back of my hands, varying in size from a florin to a crown. There is no pain and they usually disappear within a week, leaving a brown stain. Though I am an old man my health is good. Can you explain these happenings?*

A.—The description of these lesions corresponds exactly to what is called "senile purpura"—if the questioner will forgive this term. It is a well-recognized condition and was first described by Thomas Bateman in his *Practical Synopsis of Cutaneous Disease* (London, 1818). The histology was studied by Unna (*Arch. Dermatol. Syph.*, 1895, **33**, 200), who found that the haemorrhages occurred either by rhexis or diapedesis into the degenerate senile skin from the smaller and often sclerotic vessels. Senile purpura is benign, associated with no other haemorrhagic phenomena, and carries no sinister implication. It commonly occurs on the back of the hands and forearms where the skin in the elderly is often atrophic and lax. There is no satisfactory treatment, and it must be regarded as one of the tiresome but harmless accompaniments of increasing years.

Castor Oil for Summer Diarrhoea

Q.—*Is the practice of swallowing a dose of castor oil for the treatment of any and every form of summer diarrhoea justified by present-day knowledge of the physiological and pathological flora of the alimentary tract?*

A.—The present-day knowledge of the aetiology of summer diarrhoea is not sufficiently complete to make any very didactic statements, but the routine use of castor oil in every case in infancy does not appear to be justified. It was based on the assumption that (*a*) there was an irritant in the gut which should be expelled, (*b*) the subsequent action of castor oil was a constipating one. When parenteral infection is the primary cause of summer diarrhoea castor oil is useless, and when an enteral infection is present (e.g., Sonne dysentery) there are more specific means of treatment available. The use of castor oil might well be reserved for older infants and children who are known to have eaten a specific gastro-intestinal irritant.

Sore Tongue in Pernicious Anaemia

Q.—*What is the treatment of a persistently severe sore tongue in a case of pernicious anaemia? The patient has had adequate treatment with liver parenterally, and large doses of all the vitamins.*

A.—It is most unusual for soreness of the tongue to persist in adequately treated pernicious anaemia. Minot and Murphy in their original paper found that this symptom disappeared early and that its recurrence almost always indicated inadequate treatment. The same observation was made by Oatway and Middleton (*Arch. intern. Med.*, 1932, **49**, 860) who stressed the importance of this sign as showing inadequate dosage or advancing neurological disease. It would therefore be worth while doubling the dose of liver extract and perhaps changing to one of the cruder products unless the patient is already receiving such a preparation.

The other possibility is that the glossitis is unrelated to the anaemia in this case. Sore tongue has been relieved both by nicotinic acid 150 mg. daily, and riboflavin 10 mg. daily; but this patient has apparently had all the vitamins. Leukoplakia in an early stage is another possibility.

Finally, cases of glossitis do occur which cannot be explained and which do not respond to treatment. The pain can be relieved by mouth washes of 1% pantocaine before meals.

Trilene Administration

Q.—*In the Journal of July 6 a method of using trilene with Hewitt's modification of Clover's inhaler is described. As I cannot obtain this can you recommend any other simple apparatus?*

A.—Trilene and air can be used either for self-administered analgesia or for light anaesthesia. Freedman's inhaler is a simple and efficient method of providing analgesia by the patient's inspirations being drawn over the surface of the liquid. The inhaler was designed for midwifery but can be used for almost any purpose except dentistry, where the mouth must be free. For these cases Hill's nasal inhaler is useful. The patient blows air from a rubber hand-bulb through the trilene bottle to a nose-piece.

If anaesthesia is necessary Marrett's vaporizer can be employed. This is a "draw-over" apparatus with an adjustment for varying the concentration of trilene vapour. If a gas and oxygen apparatus is available trilene can be placed in the chloroform bottle and added in minimal amounts to the mixed gases. Care must be taken not to give an overdose or tachypnoea will ensue.

The Colour-blind Driver

Q.—*If one discovers red-green colour blindness in an otherwise healthy person should one certify that he is unfit to drive a public service vehicle? Is there any statement on this subject in the Road Traffic Act?*

A.—Colour blindness is not specifically mentioned in the questionary which the doctor is required to answer, but among other things he has to declare generally whether he considers the candidate's vision a likely source of danger. In answering this question he would undertake serious responsibility if he made no mention of the colour blindness, but he is presumably entitled, having mentioned it, to say that he does not consider it a source of danger—though the question appears to involve important non-medical factors. Such cases are in practice very rare. The licensing authority would probably give the candidate a special test. The matter is not dealt with in the Act, which merely empowers the Minister to make appropriate regulations. These are published in S.R.O., 1934, No. 1321.

Painless Labour

Q.—*Have any of the leading obstetricians personally confirmed Dr. Grantly Dick Read's methods of ensuring painless childbirth in normal labours as described in his book "Revelation of Childbirth"?*

A.—Most obstetricians agree with the principles underlying Dr. Dick Read's methods and believe that the management of the patient as he suggests is conducive to easier and more natural labour. However, there are few if any who would go so far as to agree that the application of such methods, except perhaps in the very occasional susceptible patient, results in the labour being entirely painless.

Gouty Deposits

Q.—*A female patient aged 69 suffers from attacks of gout affecting the great toe and thumb. This is a clinical diagnosis unconfirmed biochemically. From time to time small, hard, red areas appear on the palmar surfaces of the fingers. These gradually soften and when incised yield a substance the colour and consistency of "off-white" paint, which contains polymorph cells but no organisms. What is this condition?*

A.—The description suggests that the fluid contains sodium biurate crystals, and if these are found the diagnosis of gout is confirmed. In long-standing cases of gout the sodium biurate is deposited in the cartilages of the joints, along the tendon sheaths, and in the subcutaneous tissues. In the latter situation the deposits are liable to cause local inflammation, which may finally ulcerate through the skin and discharge the "white fluid." A skiagraph of the hand would also settle the diagnosis.

Sterilization with Penicillin

Q.—*Would one or two penicillin lozenges dissolved in a pint bottle of milk help towards its sterilization? Or would the acidity or alkalinity of the milk render it inert?*

A.—Unless the milk were already almost unfit for consumption its reaction would not be a serious obstacle. There are two others of more importance. The lesser of these is the dependence of the bactericidal action of penicillin on temperature: the lower this is the less would the effect be. The greater difficulty is the varied flora with which the penicillin would have to contend. We know of no information about the susceptibility to penicillin of the various bacteria concerned in the souring of milk, but it is very likely that some of them would be much more resistant than pathogenic Gram-positive species. If coliform bacilli were present, as they commonly are in unsatisfactory milk, they would not only grow in spite of the presence of penicillin but would destroy it. Penicillin would in no circumstances sterilize milk: it could only reduce the numbers of bacteria or prevent their further growth. In present circumstances it surely remains a duty only to use penicillin for the treatment of disease, and in cases where there is a reasonable expectation of benefit. To degrade such a substance by trying to make it compensate for unhygienic methods of handling milk would be a waste of the worst kind.

Congenital Pyloric Stenosis

Q.—*Please enlighten me on the aetiology (particularly the predisposing factors) of congenital pyloric stenosis.*

A.—Congenital pyloric stenosis is undoubtedly inherited, but it is uncertain whether the disorder is recessive or dominant. Studies of large numbers indicate a higher degree of cousin marriages among the parents than would be expected on a chance sample of the population, which favours a recessive gene. On the other hand recorded instances of a child and his parent both having the disorder are not uncommon, and pedigrees have been published which give the appearance of a dominant gene. The condition has been found at birth and even in a foetus, so that the cause must be prenatal and not due to feeding or any postnatal factor. Some disorder of the autonomic system is usually postulated, but it is also said that the so-called hypertrophied muscle is abnormally packed with glycogen, as is found in Von Gierke's disease.

INCOME TAX

Car Transaction

D. N. bought car A while acting as an assistant and in receipt of an (untaxed) car allowance. On being called up to the R.A.M.C. he sold the car, and in November, 1945, bought car B. He resumed the assistantship in January, 1946, and became a partner in the practice in April, 1946.

*** No deduction can be claimed for the purchase of the car at a time when he was not professionally engaged. In the circumstances D. N. will have to confine his claim to the depreciation allowance for 1946-47.

Income Arising in a Dominion

"ANTIPODEAN" states: "I am at present living and earning income in this country but my domicile is in New Zealand." He has investments in a Dominion on which he pays income tax there; so far no remittances have been made to the United Kingdom. What is his position as regards British income tax?

*** In the case of any person who satisfies the Commissioners of Inland Revenue (as presumably "Antipodean" can do if required) that he is not domiciled in the United Kingdom, tax is payable not, as in other cases, on the amount arising abroad, but on the sums which have been or will be received in the United Kingdom. In the circumstances "Antipodean" need not include the income in his British income tax return unless and until some amount is received in this country. As the law now stands he will then be liable to British tax, less the appropriate Dominion income tax relief, and the amount of the remittance in so far as it is covered by income arising abroad while he is in the United Kingdom.

LETTERS, NOTES, ETC.

Mites in Sputum

Dr. REGINALD FISHER (King's Langley) writes: Perhaps it may be of interest to record that in 1913 I found mites in the sputum of a case of lung abscess following empyema in a man who had never been out of England. In one specimen I found the detached leg of a mite, in another a complete insect somewhat resembling a cheese mite. Up to now I have thought of these as contaminants.

Medical Service in Australia

Dr. IAN GILLILAND (Hessle) writes: Sir Ernest Graham-Little builds up a strong case in his letter (Aug. 24, p. 272) on information which he received from a colleague in Canberra. This states "that an Act embodying the socialist aspirations for a State Medical Service was passed some years ago by the Socialist Government" of Australia. This statement came as a considerable surprise to many. Sharing this surprise, the editor of the *Medical World* wrote to the High Commissioner of the Commonwealth of Australia and received the following information: "I have to advise you that no Bill to establish a State Medical Service has been introduced into the Commonwealth Parliament of Australia." In view of this contradiction and of the importance attached to the whole episode by Sir Ernest Graham-Little, I feel that a further explanation is called for.

Children in Nurseries

"E. D. F." writes: With reference to Mrs. G. M. Woolf's letter (Aug. 31, p. 318), fifteen years ago I worked in a voluntary day-nursery. There it was customary to use small squares of old linen for nasal hygiene, burning the soiled ones immediately. Recently on return to nursery work I was again confronted with the never-ending problem of nasal catarrh. By regular morning cleaning of each child's nostrils, and by the use of hard-baked rusks, there was great improvement. Possibly the exercising of the nasal and oral passages kept the "huns on the run."

The Late Dr. E. H. van Someren

An obituary notice and appreciation of Dr. E. H. van Someren, who died at Syracuse, appeared in the *Journal* of March 15, 1913. Distress has been caused to his family by the wholly erroneous statement in a recent book of memoirs that Dr. van Someren suffered from melancholia and committed suicide.

Correction

Mr. HARRY FREEMAN writes: My letter in the *B.M.J.*, 1945, **2**, 510, states that "the oesophagus is deficient behind in the upper 1½ in., there being a dehiscence of the *inner* longitudinal fibres." This should read the "*outer* longitudinal fibres," and Dr. C. Ailan Birch very kindly drew my attention to this clerical error on my part.

H.M. Forces Appointments

ARMY

Col. R. R. G. Atkins, O.B.E., M.C., late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Brig.

Lieut.-Col. H. T. Findlay, from R.A.M.C., to be Col.

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. J. C. Denvir has retired on retired pay and has been granted the honorary rank of Col.

Lieut.-Col. G. G. Drummond, having attained the age of retirement, is retained on the Active List supernumerary.

Majors (War. Subs. Lieut.-Cols.) S. W. K. Arundell and A. N. T. Meneces, C.B.E., D.S.O., to be Lieut.-Cols.

Short Service Commissions.—War Subs. Major G. G. Smith has retired and has been granted the honorary rank of Lieut.-Col. Capt. S. P. Bellmaine has retired and has been granted the honorary rank of Major.

War Subs. Major W. Thomson has retired and has been granted the honorary rank of Major. (Substituted for the notification in a *Supplement* to the *London Gazette* dated June 25).

Capt. T. G. A. L. Warrington has been appointed to a permanent commission.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

War Subs. Major W. C. Barber, T.D., to be Major.

Lieut. A. D. M. Greenfield, supernumerary for service with University of London Senior Training Corps (Med. Unit) has resigned his commission.

LAND FORCES: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Subs. Lieut.-Col. J. P. Fehily has relinquished his commission and has been granted the honorary rank of Col.

War Subs. Capts. P. Esmonde and B. G. Hill have relinquished their commissions and have been granted the honorary rank of Major.

The notification regarding Lieut. D. L. Cran in a *Supplement* to the *London Gazette* dated June 28, has been cancelled.

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

War Subs. Capt. (Miss) I. W. Simpson has relinquished her commission on account of disability and has been granted the honorary rank of Capt.

ROYAL AIR FORCE

ROYAL AIR FORCE VOLUNTEER RESERVE

E. J. Radley-Smith to be Squad.-Ldr. (Emergency).

Fl.-Lieut. (Temp. Squad.-Ldr.) J. H. McElney has resigned his commission retaining the rank of Squad.-Ldr.

Fl.-Lieut. K. P. G. Mears has resigned his commission retaining the rank of Squad.-Ldr.

To be Fl.-Lieuts. (Emergency): P. Dawson-Edwards, W. T. W. Paxton, and R. M. MacKenzie.

To be be Flying Officers (Emergency): D. N. Baron, B. Dover, C. Clark, G. Clayton, E. J. L. Davies, J. H. Edworthy, A. S. Hughes, J. G. Jackson, M. C. Joseph, A. C. Parry, M.C., E. R. Smith, T. Taylor, R. R. Trussell, and T. R. E. Pilkington.

The notification regarding D. C. Bodenham in a *Supplement* to the *London Gazette* dated July 9, has been cancelled.

INDIAN MEDICAL DEPARTMENT

Capts. A. R. Bell, A. R. D'Abreu, W. A. Browne, E. R. Hill, A. C. S. Mann, and P. W. Emmett to be Majors.

Lieuts. P. W. Emmett, P. F. Fanaken, G. S. Rozario, A. St. C. Bartley, A. N. De Monte, M.B.E., M.C., C. H. W. Windsor, M.B.E., R. T. M. Hayter, M.B.E., J. C. Mendis, M. J. Godfrey, M. J. Nicholas, and H. G. M. Campbell to be Capts.

First Class Assistant Surgeons J. R. Cartner, W. E. Rodgers, W. J. Rowe, J. S. E. Barnard, C. A. Martin, A. E. A. Phaure, C. F. Vieyra, R. O. A. Smith, B. St. C. F. Lynsdale, A. L. G. Alien, A. A. Fecgrade, and S. A. De Souza to be Lieuts.

Dr. George F. Lull, former Deputy Surgeon-General of the United States Army, on April 1 of this year succeeded Dr. Olin West as General Secretary and Manager of the American Medical Association. Dr. West became General Secretary of the A.M.A. on the retirement of Dr. George H. Simmons in 1924. He had been previously an executive officer of the Tennessee State Board of Health and Director for the Rockefeller Sanitary Commission and International Health Board in Tennessee.

Association Notices

Middlemore Prize

The Middlemore Prize consists of a cheque for £50 and an illuminated certificate, and was founded in 1880 by the late Richard Middlemore, F.R.C.S., of Birmingham, to be awarded for the best essay or work on any subject which the Council of the British Medical Association may from time to time select in any department of ophthalmic medicine or surgery. The Council is prepared to consider the award of the prize in the year 1947 to the author of the best essay on: "The Aetiology and Treatment of Chronic Iridocyclitis." Essays submitted in competition must reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, on or before Dec. 31, 1946. Each essay must be signed with a motto and accompanied by a sealed envelope marked on the outside with the motto and containing the name and address of the author. In the event of no essay being of sufficient merit the prize will not be awarded in 1947.

Meetings of Branches and Divisions

EASTBOURNE DIVISION

At a recent meeting concern was expressed by various members about the general and local shortage of midwives.

A resolution, "That in the opinion of this Division in view of the grave shortage of midwives the period of their training should be reduced to six months," was carried unanimously.

WEEKLY POSTGRADUATE DIARY

BLACKPOOL: VICTORIA HOSPITAL.—*Thurs.*, 8 p.m., Dr. McKenna, *X*-ray Treatment in Diseases of the Skin.

EDINBURGH POSTGRADUATE LECTURES.—At West Medical Theatre, Edinburgh Royal Infirmary, *Thurs.*, 4.30 p.m., Dr. H. L. Wallace, Care of the Small Premature Infant.

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—*Wed.*, 8 p.m., Dr. W. O. G. Taylor, Aetiology and Treatment of Paralytic Squint.

LIVERPOOL HEART HOSPITAL.—*Mon.*, 3.30 p.m., Dr. Harris, High Blood Pressure; 4.30 p.m., Dr. Doyle, Congenital Heart Disease. *Tues.*, 3.30 p.m., Dr. Hibbert, Fundus Appearances in Sclerosis and use of the Ophthalmoscope; 4.30 p.m., Prof. R. A. Morton, Modes of Action of Vitamins. *Wed.*, 3.30 p.m., Dr. Harris, (i) Cardiac Arrhythmias; 4.30 p.m., Dr. Datnow, (i) Constitutional Complications of Pregnancy. *Thurs.*, 3.30 p.m. and 4.30 p.m., Dr. Harris, Ward Round. *Fri.*, 3.30 p.m., Dr. Doyle, Coronary Thrombosis; 4.30 p.m., Dr. Arundel, Tonsil Affections in Relation to Rheumatic and Cardiac Conditions.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. *for* 18 *words or less. Extra words* 3s. 6d. *for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.*

BIRTHS

CHILD.—On September 5, 1946, at the Radcliffe Infirmary, Oxford, to Margot (*née* Bond), wife of Dr. J. P. Child, a son—David Laurie.

FRANKLIN.—On September 1, 1946, at Edgware, to Margaret (*née* McIlroy), wife of Dr. C. B. Franklin, a son.

JOHNSON.—On August 30, 1946, at University College Hospital, to Gwendoline (*née* Galpin), wife of Dr. S. J. Johnson, a son.

MACGARRY.—On August 26, 1946, at Isallt Nursing Home, Llandudno, to Dora (*née* Hiltermann), wife of Dr. P. V. MacGarry, Ipoh, Malayan Union, a son.

MACGREGOR.—On September 5, 1946, at Kilmarnock Burgh Maternity Home, to Rosa F. MacGregor, M.B., Ch.B. (*née* McLaren), wife of Dr. Ian B.-K. MacGregor, a daughter—Gelda Margaret.

MCGUFFIE.—On September 5, 1946, at Westbay Nursing Home, Dundee, to Gwendoline Mary (*née* Sturrock, M.B., Ch.B.), wife of S. M. McGuffie, M.B., Ch.B., a son.

PICKARD.—On August 31, 1946, to Daphne, wife of H. M. Pickard, 718, Endsleigh Court, W.C.1, a daughter.

ROGERSON.—On August 30, 1946, at Bark Hill House, Whitchurch, Shropshire, to Drs. Gerard and Evelyn Rogerson, a daughter.

THÉ.—On August 25, 1946, at Nuffield House, Guy's Hospital, to "Bunny," wife of Dr. I. T. Thé, a son—Robert.

WYANT.—On July 27, 1946, at Leicester, to Anne (*née* Dunnett) and Lieut.-Colonel G. M. Wyant, R.A.M.C., a son.

MARRIAGE

DILLON—BAILEY-THOMSON.—On July 25, 1946, in Nottingham, John Blake Dillon, M.B., B.Ch., to Joyce Doreen Bailey-Thomson, M.B., Ch.B.

DEATH

MITCHELL.—On August 26, 1946, at Rothay Garth, Ambleside, Westmorland, Thomas Houghton Mitchell, M.D., in his 84th year.